Supreme Court, U.S.
FILED
(1)
011436 MAR 25 2002
OFFICE OF THE CLERK

No. _____

In the Supreme Court of the United States

JOE KENNEDY, as successor in interest and as personal representative of the ESTATE OF ELLEN MARIE KENNEDY; SHAWN KENNEDY; ERIC KENNEDY; SHANNON KENNEDY by and through her parent and guradian JOE KENNEDY; and CHAD KENNEDY by and through his parent and guardian JOE KENNEDY,
Petitioners,

v.

SOUTHERN CALIFORNIA EDISON COMPANY; COMBUSTION ENGINEERING, INC.,
Respondents.

ON PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

PETITION FOR WRIT OF CERTIORARI

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QUESTION PRESENTED

Can a federal court, under jurisdiction conferred by statute that requires it to follow state substantive law, refuse to give causation instructions mandated by the state supreme court?

PARTIES TO THE PROCEEDING

Petitioners

JOE KENNEDY, as successor in interest and as personal representative of the Estate of ELLEN MARIE KENNEDY; SHAWN KENNEDY; ERIC KENNEDY; SHANNON KENNEDY by and through her parent and guardian JOE KENNEDY; and CHAD KENNEDY by and through his parent and guardian JOE KENNEDY.

Respondents

SOUTHERN CALIFORNIA EDISON COMPANY; COMBUSTION ENGINEERING, INC.

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The per curiam opinion of the United States Court of Appeals for the Ninth Circuit that gives rise to this petition is reported as *Kennedy v. Southern California Edison Co.*, 268 F.3d 763 (9th Cir. 2001). A copy of the Opinion is included in the Appendix at Appendix C at 5a-20a. The previous, withdrawn unanimous opinion of the United States Court of Appeals for the Ninth Circuit is reported as *Kennedy v. Southern California Edison Co.*, 219 F.3d 988 (9th Cir. 2000). A copy of that Opinion is included in the Appendix at Appendix E at 23a-54a. That opinion was withdrawn by Order of the Court on September 19, 2001, reported as *Kennedy v. Southern California Edison Co.*, 265 F.3d 1080 (9th Cir. 2001), and included in Appendix D at 21a-22a. The United States Court of Appeals for the Ninth Circuit issued an order denying the Petition for Rehearing and for Rehearing En Banc on December 28, 2001, which is included in Appendix A at 1a-2a.

JURISDICTION

The United States Court of Appeals for the Ninth Circuit issued its per curiam Opinion on September 26, 2001. On October 9, 2001, Petitioners filed a Petition for Rehearing and Rehearing En Banc, which the Ninth Circuit denied on December 28, 2001. This Petition for Writ of Certiorari is filed within 90 days of the denial of the Petition for Rehearing. This Court's jurisdiction is invoked pursuant to 28 U.S.C. § 1254(1).

STATEMENT OF THE CASE

In this toxic tort, cancer death case, Petitioners' decedent developed a rare form of radiogenic leukemia caused

by exposure to Respondents' radiation, created when grossly defective fuel rods were knowingly used to operate the reactors at a nuclear power plant for two years and contamination was permitted to escape into the public domain. The case was brought in federal district court under the Price-Anderson Act, federal jurisdiction established by 42 U.S.C. § 2210(n)(2). After a two month trial, Petitioners submitted state law causation instructions based on controlling California Supreme Court authority, *Rutherford v. Owens-Illinois, Inc.*, 941 P.2d 1203 (Cal. 1997)("*Rutherford*"); *Bockrath v. Aldrich Chemical Co., Inc.*, 980 P.2d 398 (Cal. 1999), as is mandated by Price-Anderson at 42 U.S.C. § 2014(hh). *See Silkwood v. Kerr-McGee, Corp.*, 464 U.S. 238, 252-253 (1984); *O'Conner v. Commonwealth Edison Co.*, 13 F.3d 1090, 1100 (7th Cir. 1994). The trial court refused to give the *Rutherford* contribution to risk instruction on causation. Following a defense verdict at trial, the appeal was fully briefed, argued and submitted on February 10, 2000. The original thirty-two page opinion of the Ninth Circuit, filed on July 20, 2000, unanimously and properly reversed and remanded the matter. (App. E at 23a-54a). The Court determined that the trial court was in error by refusing to give the causation jury instruction mandated by the California Supreme Court in toxic tort, cancer death cases (*Rutherford*), and further, that failure to give this instruction was not harmless error. (App. E at 28a-35a, 41a-44a).

Following a petition for rehearing, and briefs by amici sympathetic to the nuclear industry, the same Panel, completely contrary to its prior finding, and on the same record, concluded that failure to give the causation jury instruction mandated by the California Supreme Court was harmless error, and assigned a quantitative numerical risk assessment in determining causation based on disputed evidence offered by Respondents, which judicial

determination is itself also in conflict with the controlling State Supreme Court. (App. C at 16a-19a).

ARGUMENT FOR GRANTING THE WRIT

This Petition for Writ of Certiorari should be granted, because the Ninth Circuit Court of Appeals has decided an important federal question in a way that is in direct conflict with an on point ruling of the California Supreme Court. The issue addressed to this Court has exactly the compelling nature set out in the guidelines set by this Court for granting a Writ of Certiorari. Supreme Court Rule 10 directs that "[a] petition for a writ of certiorari will be granted only for compelling reasons," and sets forth some of the factors that the Court considers, including the following:

> a United States court of appeals...has decided an important federal question in a way that conflicts with a decision by a state court of last resort; or has so far departed from the accepted and usual course of judicial proceedings...as to call for an exercise of this Court's supervisory power;

Supreme Court Rule 10(a).

In this cancer death case, Ellen Kennedy, wife and mother of Petitioners, at 43 years of age, succumbed, after a full bone marrow transplant, to a rare form of leukemia caused by exposure to radiation which escaped off-site in violation of Federal regulations from Respondent's nuclear power plant, when it made a decision to operate with known defective fuel rods. The case was brought, as required, in federal district court pursuant to the Price-Anderson Act, 42 U.S.C. § 2011 et seq., ("Price-Anderson Act" or "Price-

Anderson"), which grants federal jurisdiction over such public liability actions or injuries arising out of a nuclear incident, and provides that state substantive law governs such actions, except where inconsistent with the Act. *See* 42 U.S.C. § 2014(hh). Under the federal legislation, federal courts are to look to state law for substantive rules of decision. *Silkwood*, 464 U.S. at 252-253; *O'Conner*, 13 F.3d at 1100. This Court has clearly held that Price-Anderson is the only mechanism for compensation for exposure to radiation and consequent injuries. A victim of a nuclear exposure has a Price-Anderson claim or no claim at all. *See El Paso Natural Gas Co. v. Neztsosie*, 526 U.S. 473, 484 (1999); *In re TMI Litigation Cases Consol II*, 940 F.2d 832, 854 (3d Cir. 1991), *cert. denied*, 503 U.S. 906 (1992). This Court has also held that while Congress intended to preempt state law causes of action by Price-Anderson, it also expressly incorporated state law, giving the states an important role to play in nuclear exposure cases, through application of state substantive law. See S. Rep. No. 1605, at 6-10 (1966); *Duke Power Co. v. Carolina Environmental Study Group, Inc.*, 438 U.S. 59, 65-6 (1978). Substantive law in a radiation cancer case, of course, includes an instruction to the jury on plaintiffs' burden of proof as to causation, as the Ninth Circuit originally unanimously held, consistent with every circuit which has considered the question. *See In re TMI*, 67 F.3d 1103, 1117 (3d Cir. 1995), *cert. denied*, 516 U.S. 1154 (1996), where the Court looked to existing Pennsylvania law for the rule of decision on causation. The Ninth Circuit's reversal in this case of the rules requiring application of State Supreme Court rules of causation is a dramatic departure from established authority in an important area, with radiation exposure cases being brought every year in many jurisdictions, and where consistency in federal law is essential. The per curiam *Kennedy* opinion also reverses federal law in the area of respect for states' rights generally

in a way highly detrimental to this Court's previous clear direction.

In 1997, the California Supreme Court issued its opinion in *Rutherford*, holding that in a cancer death case, California's traditional jury instructions on causation were inadequate, and that the jury must also be instructed that:

> [T]he plaintiff may meet the burden of proving that exposure to defendant's product was a substantial factor causing the illness by showing that in reasonable medical probability it was a substantial factor contributing to the plaintiff's or decedent's risk of developing cancer. The jury should be so instructed.

Rutherford, 941 P.2d at 1223.

Rutherford was an asbestos cancer case, but the logic of contribution to risk when the precise cancer mechanism cannot be shown applies to all toxic cancer cases, and the California Supreme Court has subsequently applied *Rutherford* and its "risk instruction" to claims involving exposure to toxic substances other than asbestos. *See Bockrath*, 980 P.2d 398.

In the instant case, over Petitioners' objection, the trial court refused to give the *Rutherford* risk instruction mandated by the California Supreme Court. On appeal the Ninth Circuit in a unanimous, published opinion filed on July 20, 2000, reversed and correctly held that the State law *Rutherford* risk instruction had to be given, specifically rejecting the nuclear plant's claim that failure to so instruct was harmless error. (App. E at 28a-35a, 41a-44a).

Following the Ninth Circuit's published opinion, the nuclear power plant filed a petition for rehearing, supported by a chorus of protest against the risk instruction by amici sympathetic to the nuclear industry, including a so-called think tank called the Atlantic Legal Foundation. The Ninth Circuit thereupon granted rehearing, withdrew the unanimous published opinion, reversed itself entirely, and on September 26, 2001, filed a per curiam opinion upholding the refusal to give the required risk instruction as "harmless error," (App. C at 5a-20a) despite the California Supreme Court's admonition to the contrary. In an unusual departure from normal process, the Appellate Court did this on the same record and without new briefing as to whether refusal to give the mandatory instruction on cause can be harmless error under California law. In doing so, the ultimate ruling of the Ninth Circuit, on an important federal question under the Price-Anderson Act, is flatly inconsistent with controlling California state law, as well as with its own previous published, unanimous decision and Supreme Court authority on federalism principles. The Court will be hard pressed to find a more remarkable example of an end driven result directly contrary to established rules of law and governing authority, both from this Court and the highest Court of the State involved. The Ninth Circuit has lost its compass and exceeded its authority as interpreted by this Court, which mandates that it apply important federal legislation so that it does not conflict with controlling state law. This Court should grant certiorari, reverse the second per curiam ruling of the appellate court, and reinstate its prior, proper opinion, which followed the rules of this Court and controlling state law.

In addition to supporting the refusal of the trial court to give the mandated State Supreme Court *Rutherford* risk instruction, the per curiam opinion also impermissibly creates

federal common law, *O'Melveny & Myers v. Federal Deposit Insurance Corporation*, 512 U.S. 79, 83 (1994), and for the first time in the history of the Price-Anderson Act, mandates a quantitative numerical risk assessment in determining causation, which is itself also in conflict with the controlling state Supreme Court ruling in *Rutherford*[1] which states that:

> The term 'substantial factor' has not been judicially defined with specificity, and indeed it has been observed that it is 'neither possible nor desirable to reduce it to any lower terms.' (Prosser & Keeton on Torts, supra, § 41, p. 267.)

Rutherford, 941 P.2d at 1214.

In conflict with this ruling the court below has set specific numerical cut offs defining substantial factor causation, in place of the required risk instruction.

Finally, as a result of this ill considered per curiam ruling refusing to apply governing law and setting a numerical cut off for risk which may not go to the jury, nuclear power operators and manufacturers of nuclear fuel are not

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[1] The Ninth Circuit's new "numerical cut off" standard of causation is not only contrary to California Supreme Court authority, it is contrary to the express intent of Price-Anderson itself, and is in direct conflict with the Nuclear Regulatory Commission's Regulations, promulgated to protect the public from harmful levels of radiation. *See* 10 C.F.R. 20.105(b). It is also contrary to universally accepted radiation science, which accepts the "no threshold limit" or no safe level of exposure principle of radiation medicine. *See, e.g.*, Biological Effects of Ionizing Radiation V, Washington, DC: Natl Acad Press, 1990.

responsible for compensating members of the public, including Mrs. Kennedy's family, even when nuclear radiation escapes at a level that violates the federal regulations. This is true because the risk level accepted by the appellate court as requiring dismissal of the case is *above* the amount of radiation escaping off site that constitutes a violation of the federal standards. In other words, the statute for control of off site radiation was violated here, but the court ruling adopts the defense position that such levels of radiation cannot be presented to the jury as the basis for arguing cause. Thus, even where the Nuclear Regulatory Commission ("NRC") has set a level of public safety radiation standards, violations of which are by federal definition a violation of the standard of care (as is the case in Kennedy by NRC findings), the Ninth Circuit has legislated that these exposure levels may *not* be a basis for causation, because the Ninth Circuit has determined exposure above NRC guidelines cannot cause leukemia *as a matter of law.* The Ninth Circuit, lead into error by Respondents, has put the federal court in direct conflict with Congress and the agency it delegated to determine the levels of radiation exposure which present public health risks. *See In re TMI Litigation Cases Consol. II*, 940 F.2d at 859. Thus, the opinion below is also inconsistent with the regulations under the federal act itself, and with all other circuit courts, which have, as they must, adopted the federal regulations. For example as the United States Court of Appeals for the Eleventh Circuit recently stated:

> [V]irtually every federal court to consider the issue, including three circuit courts of appeals, have held that "federal regulations must provide the sole measure of the defendants' duty in a public liability cause of action." *O'Conner*, 13 F.3d at 1105; see also *Nieman*

v. NLO, Inc., 108 F.3d 1546 (6th Cir.1997); *In re TMI Litigation Cases Consol. II*, 940 F.2d 832 (3d Cir.1991).

Roberts v. Florida Power & Light Company, 146 F.3d 1305, 1308 (11th Cir. 1998).

This Court needs to accept jurisdiction and re-establish the federal statutory and state law framework for such Price-Anderson cases because the Ninth Circuit, perhaps inadvertently, has turned Price-Anderson law on his head. The Ninth Circuit has now put these important radiation control and enforcement Federal questions under Price-Anderson in conflict with the highest court of the state and with the rulings of the other circuits which enforce the Federal regulations.

I. California state rules of causation govern this action

The Price-Anderson Act, 42 U.S.C. §§ 2011 et seq., is the principal federal legislation that governs private, commercial use of radioactive material for power generation. The Act creates federal jurisdiction over public liability actions or lawsuits for injuries arising out of a nuclear incident and provides that state substantive law governs such actions, except where inconsistent with the Act.

> [T]he substantive rules for decision in such action shall be derived from the law of the State in which the nuclear incident involved occurs, unless such law is inconsistent with the provisions of [section 2210].

42 U.S.C. § 2014(hh).

Thus, under the federal legislation, federal courts are to look to state law for rules of decision, unless such laws would hinder a victim from recovery for radiation injury. *See Silkwood*, 464 U.S. at 252-253; *O'Conner*, 13 F.3d at 1100. Substantive law in a radiation cancer case, of course, includes an instruction to the jury on plaintiffs' burden to prove "causation." Thus, the federal trial court must first look to state law, to determine the correct substantive rule, and then it must compare that rule to the express purpose of Price-Anderson, namely to promote victim compensation from radiation injuries. For example, consistent with the goal of promoting victim compensation, in 1966, Price-Anderson was amended to include, among other provisions, a waiver of certain defenses. As the Senate Report stated:

> The primary end result of these waivers would be to eliminate, first, any requirement that a claimant prove negligence ("fault") in order to recover for his damages, and second, any possible issue as to the claimant's contributory negligence or assumption of the risk.

U.S. Code Cong. & Admin. News 1966, p. 3201-02, from S. Rep. No. 1605, 89th Cong., 2d Sess. (1966).

Congress adopted this approach, which is consistent with the federal policy of prompt compensation to victims. *See Duke Power Co.*, 438 U.S. at 89. Consistent with the policy of promoting victim compensation, if the state rule is not designed to allow compensation for victims of radiation injury, then the federal court must use a federal rule of substantive law. If state law does promote victim compensation in radiation disease cases, then the state law must be followed. Legislative history recites that Congress took pains in the Act not to displace state law, and when it felt

it necessary to foster compensation, it did so in the least intrusive manner possible. *See* S. Rep. No. 1605, at 6-10 (1966); *Duke Power Co.*, 438 U.S. at 65-6.

It is undisputed by litigants and the Courts that Congress did not expressly set forth a federal substantive rule of causation displacing state laws of causation, and therefore under Price-Anderson, the Courts are to look to, and apply, the state laws of causation. Recognizing this fact, the Ninth Circuit began its second, published opinion in this case with the statement, "Under the Price-Anderson Act . . . our decision is guided by the substantive law of California . . . . 42 U.S.C. § 2014(hh)." (App. C at 9a). As the Court noted in its first opinion, Respondents' argument was also based solely on the interpretation of California law. (App. E at 27a, fn 3). The Ninth Circuit therefore correctly looked to California law of causation as the law to apply to this case.

II. California has adopted the *Rutherford* causation instruction for toxic tort cancer cases

In 1997, the California Supreme Court issued its opinion in *Rutherford,* 941 P.2d 1203, a case which "altered the landscape of California tort law..." (App. C at 12a). In *Rutherford*, as here, plaintiffs sought a burden shifting instruction on causation in an alleged asbestos-related lung cancer case, arguing that the burden of proof should shift to the Defendants after Plaintiff had proven causation. *See Summers v. Tice*, 199 P.2d 1 (Cal. 1948). Plaintiff, Mr. Rutherford, who had smoked cigarettes for over 30 years, had been diagnosed with lung cancer, the number one cause of which is cigarettes; asbestos also causes lung cancer. The diagnosis of lung cancer in *Rutherford* was undisputed, as was the diagnosis of Ellen Kennedy's leukemia. *Rutherford,* 941

P.2d at 1207. The *Rutherford* Court denied the request for a burden shifting instruction, but recognized that California's traditional jury instructions on causation were inadequate[2], and fashioned a new rule of causation which specifically defined "substantial factor" for multiple cause, toxic tort cancer cases.

> [T]he burden of proof as to the mechanism of carcinogenesis [is not] disputed here.... We agree: Plaintiffs cannot be expected to prove the scientifically unknown details of carcinogenesis or trace the unknowable path of a given asbestos fiber. But the impossibility of such proof does not dictate use of a burden shift. Instead, we can bridge this gap in the humanly knowable by holding that plaintiffs may prove causation in asbestos-related cancer

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[2] The Book of Approved Jury Instructions for California ("BAJI") provides two general instructions on causation for cases involving injuries with multiple potential causes. BAJI 3.76 defines cause, and provides: "The law defines cause in its own particular way. A cause of injury, damage, loss or harm is something that is a substantial factor in bringing about an injury, damage, loss or harm." BAJI 3.77 pertains to multiple causation, and provides: "There may be more than one cause of an injury. When [[negligent] [or] [wrongful] conduct of two or more persons] [or [[negligent] [or] [wrongful] conduct and a defective product]] contribute[s] concurrently as [a] cause[s] of an injury, [the conduct of] each is a cause of the injury regardless of the extent to which each contributes to the injury. A cause is concurrent if it was operative at the moment of injury and acted with another cause to produce the injury. [It is no defense that the [negligent] [wrongful] conduct of a person not joined as a party was also a cause of the injury.]"

cases by demonstrating that the plaintiff's exposure to defendant's asbestos-containing product in reasonable medical probability [footnote omitted] was a substantial factor in contributing to the aggregate dose of asbestos the plaintiff or decedent inhaled or ingested, and hence to the risk of developing asbestos-related cancer, without the need to demonstrate that fibers from the defendant's particular product were the ones, or among the ones, that actually produced the malignant growth.

In refining the concept of legal cause we must also ensure that the triers of fact in asbestos-related cancer cases know the precise contours of the plaintiff's burden. The generally applicable standard instructions on causation are insufficient for that purpose. Those instructions tell the jury that every `substantial factor in bringing about an injury' is a legal cause (BAJI No. 3.76), even when more than one such factor `contributes concurrently as a cause of the injury' (BAJI No. 3.77). They say nothing, however, to inform the jury that in asbestos-related cancer cases a particular asbestos containing product is deemed to be a substantial factor in bringing about the injury if its contribution to the plaintiff or decedent's risk or probability of developing cancer was substantial.

Without such guidance, a juror might well conclude that the plaintiff needed to prove that fibers from the defendant's product were a

> substantial factor actually contributing to the development of the plaintiff or decedent's cancer. In many cases, such a burden will be medically impossible to sustain, even with the greatest possible effort by the plaintiff, because of the irreducible uncertainty regarding the cellular formation of an asbestos-related cancer. We therefore hold that in the trial of an asbestos related cancer case... the jury should be told that the plaintiff's or decedent's exposure ... was a substantial factor in causing or bringing about the disease if in reasonable medical probability it contributed to the plaintiff or decedent's risk of developing cancer.

Rutherford, 941 P.2d at 1219-1220 (emphasis added).

Rutherford was decided in the context of an asbestos cancer case. However, the problem of proof addressed, is common to all toxic cancer cases. The question was how the jury should be instructed where the biological process and path of the contaminant cannot be shown by either side, and the defense attempts to use this scientific uncertainty to deny liability, even when evidence of exposure is offered by plaintiff. The Court in *Rutherford* addressed the standard for plaintiffs' proof in such situations, and acted to "bridge this gap in the humanly knowable by holding that plaintiffs may prove causation . . . by demonstrating that . . . [exposure to defendant's toxic substance] was a substantial factor in contributing to the aggregate dose . . . and hence to the risk [of cancer]." *Id.* at 1219. Neither the Court's language nor its reasoning suggests that some special provision has been crafted for those whose cancers are asbestos related, as compared to other toxin caused cancers. The holding, applied

as a precedent, covers those situations where it is possible to determine that a particular hazardous agent (here radiation) caused a disease, that the latency period matches the exposure, and that the defendant is a tortfeasor, but where it is not possible to prove that any one or more of plaintiff's exposures to radiation was the biological initiator of the cancer. This is the problem *Rutherford* was written to solve. It is no answer to say that the particular case involved asbestos, when another plaintiff is faced with the very "same hurdles," as the Ninth Circuit observed in its first Opinion. (App. E at 34a).

In addressing and rejecting non asbestos toxic tort defendants' claims that *Rutherford* was limited to asbestos cases, the California Supreme Court specifically held that the *Rutherford* causation standard applied to a non-asbestos case in *Bockrath*, 980 P.2d 398. *Bockrath* involved a cancer plaintiff who had no exposure to asbestos. His complaint alleged exposure to 222 chemicals, including rubber cements, solvents, thinners, and WD-40. The appellate court sustained without leave, a demurrer to the complaint because plaintiff could not say which of the chemicals caused his cancer. The California Supreme Court reversed *Bockrath*, directing the appellate Court to apply the causation rules of *Rutherford*. The Court's opinion clearly recognizes that in *Bockrath* what was at issue was not an asbestos cancer, but a cancer alleged to have resulted from "harmful long-term exposure to multiple toxins." *Bockrath*, 980 P.2d at 402. The Court construed *Rutherford* specifically as follows: "In *Rutherford v. Owens-Illinois* (citation omitted) we addressed the question of proof of causation in 'the context of products liability actions . . . .'" *Id.* at 403. Thus, *Rutherford* was applied generally to cases such as the one presented here, and not limited to asbestos. The court described *Rutherford* as applicable to cases "presenting complicated and possibly esoteric medical

causation issues." *Id.* at 403.

The Court in *Bockrath* also made clear that the *Rutherford* instructions do not do away with substantial factor; instead, the supplemental instruction "defines" substantial factor. The Supreme Court directed the lower courts to apply the *Rutherford* standard to what plaintiff needed to allege and prove - "that each defendant's product was a substantial factor, as that term is defined in *Rutherford*, in causing his multiple myeloma (cancer)." *Id.* at 404.

The California Supreme Court in *Rutherford* adopts the only meaningful theory of causation short of a burden shifting instruction, so that plaintiff will not always lose when the radiation, chemical or agent does not leave a marker as to its causation. The *Rutherford* rule is fair and consistent with current scientific and medical reality. Its practical result is that plaintiff does not always lose, even when exposure to defendant's hazardous substance is demonstrated, because of a rule of causation that favors a wrongdoer, where science cannot show which dose of toxin, among many, gave immediate rise to the cancer. It is this very scenario, which results from the limitations on scientific ability to determine the "actual" hit of radiation which "initiated" or "caused" the cancer, which prompted the *Rutherford* decision. *Rutherford* is completely consistent with Price-Anderson's expressed purposes and actual compensatory scheme as outlined in the Act. In choosing where to place the burden of uncertainty, as between an innocent member of the public and the nuclear operator who has violated federal regulations, *Rutherford* comes down on the side of the victim by defining "legal cause" in a manner that recognizes scientific reality.

III. The Ninth Circuit has placed itself directly in conflict with the California Supreme Court

In *Neztsosie*, 526 U.S. 473, this Court recited the purpose and stimulus behind the 1988 Amendments to Price-Anderson, which state that Congress preferred a federal forum for cases involving a single nuclear incident, so that victims of radiation releases could have their cases resolved equitably and quickly. *Netztsosie*, 526 U.S. at 477.

However, in this case, the Ninth Circuit decided an important federal question, namely the required causation to recover under Price-Anderson, by applying legal instructions on causation that are in conflict with California law and which mandate that a rational jury must find against plaintiffs. The use of such instructions guarantees that no victim of an off-site violation who thereafter develops cancer will ever be compensated for such injuries in a civil action. These legal rulings are directly contrary to state law, and turn much of Price-Anderson into meaningless window-dressing.

A fair reading of the Price-Anderson Act and its legislative history simply does not permit a conclusion that victims of radiation exposure and radiogenic cancers are given such an impossible burden of proof on causation that nuclear licensees' insurers will never have to compensate for these cancer deaths due to above NRC guideline radiation exposure. This conflicts with Price-Anderson's assurance of prompt and equitable compensation. *See Duke Power Co.*, 438 U.S. at 89. Based on the *Rutherford* case, and its applicability to this case, Petitioners submitted their proposed jury instructions to the trial court, which included a jury instruction based on *Rutherford*, which the court rejected. Subsequently Petitioners gave the trial court every possible opportunity to

correct the error, including motions before, during and after the trial, again which the Court rejected.

In its initial unanimous, published opinion, the Ninth Circuit correctly applied controlling California law, and held that *Rutherford* applied to single-defendant hazardous substance cases where the defense of alternative possible causes is raised. As the Court reasoned, in determining that a *Rutherford* risk instruction was required:

> We find little relevant distinction between a *Rutherford* case with multiple defendants, each of whose products may have been a substantial factor in causing the plaintiff's injury, and a case in which a single defendant argues that the plaintiff cannot show causation because there exist other potential sources that may have been the legal cause of the harm.
>
> In both circumstances, the plaintiff is faced with the same hurdles that the California Supreme Court identified as making proof of causation, absent the *Rutherford* instruction, nearly impossible. On a scientific level, the uncertainty regarding the biological mechanisms by which asbestos leads to lung cancer, see *Rutherford*, 941 P.2d at 1218, parallel the medical uncertainties surrounding the cause and effect relationship between CML and radiation. And, it is just as impossible to prove the course of radiation as it is to prove the "unknowable path of a given asbestos fiber." Id. at 1219.

> More importantly, by choosing to raise alternative sources of the injury as a defense, a defendant creates the need for a *Rutherford* instruction.

(App. E at 34a-35a).

Furthermore, the Court specifically stated: "We hold the district court's failure to give a proper *Rutherford* instruction was not harmless error." (App. E at 41a).

> [A]ll the jury need have concluded, if given a *Rutherford* instruction, was that it was more probable than not that there was more than a negligible probability that Mrs. Kennedy's cancer was caused by radiation from SONGS. We believe the jury could have reasonably so found.

(App. E at 43a-44a).

Following the Ninth Circuit's initial published opinion, the nuclear power plant filed a petition for rehearing, supported by a chorus of protest against the risk instruction by amici sympathetic to the nuclear industry. The Ninth Circuit thereupon granted rehearing, withdrew the unanimous published opinion, reversed itself entirely, and on September 26, 2001, filed a per curiam opinion upholding the refusal to give the required risk instruction as "harmless error," despite the California Supreme Court's admonition to the contrary. (App. C at 5a-20a). The Ninth Circuit did this using the Respondents' disputed, hypothetical and controverted figures and risk generated thereby, as the basis for its opinion, despite the fact that the law does not permit quantification of what is more than a theoretic possibility or negligible, and

ignoring the fact that there was abundant evidence in the record that Respondents' "number" was artificial and unrealistically low. The Court in *Rutherford* made plain that "substantial" is not to be numerically defined or constrained in California law:

> The term "substantial factor" has not been judicially defined with specificity, and indeed it has been observed that it is "neither possible nor desirable to reduce it to any lower terms." (Prosser & Keeton on Torts, supra, § 41, p. 267.)

Rutherford, 941 P.2d at 1214.

As the California Supreme Court also noted in *Bockrath*, "a very minor force that does cause harm is a substantial factor." *Bockrath*, 980 P.2d at 404. Despite this admonition, the Court used Respondents' controverted "probability of causation" figures[3], and concluded, "defendants introduced uncontroverted expert testimony that, even if Mrs. Kennedy was exposed to 'fuel fleas'...there is only a one in 100,000 chance that her CML was caused by the exposure...[or] assuming that we knew for certain that Mrs. Kennedy's CML was caused by radiation...there would only be a one in 30,000 chance that 'fuel flea' radiation would have been the actual cause." (App. C at 17a-18a). It concluded that "On this record, no reasonable juror could have made this finding" that the contribution of the nuclear plant was more than negligible,

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[3] The use of probability of causation in individual toxic tort cases has been strongly criticized. *See, e.g.*, Mark Parascandola, *What's Wrong with the Probability of Causation?*, 39 Jurimetrics J. 29-44 (1998).

infinitesimal or theoretical. (App. C at 17a). Therefore in direct conflict with the ruling of the California Supreme Court, the court below has set specific numerical cut offs defining substantial factor causation, in place of the required risk instruction.

The NRC has very stringent guidelines for protection of the public from exposure to radioactive material leaving the site. The NRC prohibits release of uncontrolled radiation from the San Onofre nuclear generating station, in any amount which could cause exposure to a member of the public in an amount greater than 2 millirems in any one hour or 100 millirems in any seven consecutive days. 10 C.F.R. § 20.105(b) (1985). Thus, these NRC rules establish limits in excess of which there is a substantial risk to the public, and a rational jury could so find.

In this case, Petitioners offered undisputed evidence that Respondent, Southern California Edison, violated the off site regulations and was fined for these violations, including fragments which produced in excess of 600 times the per hour limit. Against this background, Respondents' experts agreed that there is no safe level for radiation exposures, that the consensus scientific view is the linear, no threshold model, and that a single emission (of which there are trillions in any particle) can initiate the cancer process.[4] Since an amount of

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[4] *See, e.g.*, Biological Effects of Ionizing Radiation V, Washington, DC: Natl Acad Press, 1990; NCRP Report No. 116, Limit of Exposure to Ionizing Radiation, March 31, 1993 ("the Council fully endorses, the nonthreshold hypothesis for the purpose of radiation protection....") In fact, much evidence indicates that the dose levels are set far too low. For example, as a California study commissioned by the E.P.A and conducted by internationally renown scientists recently noted:

radiation exposure far below that needed to generate the hypothetical 1 in 100,000 risk can cause cancer in an individual, clearly such a greater amount creates a substantial risk in an individual. This is compelling support for why there can be no limit in advance to what a jury could find to be substantial, and not "theoretical" or "trivial," taking account of all the circumstances presented. *Rutherford* says that as a matter of law the jury is to make this decision unfettered by some arbitrary numerical standard, and using the instructions specifically approved by the California Supreme Court.

If the Ninth Circuit's opinion is allowed to stand, it would mean that a nuclear facility could violate the off-site limits it invokes, as Respondents did here, as the "safe habor" for the standard of care issue, and then never be found to be responsible for a radiation cancer in an individual exposed within the right latency period, above the limits because the increased risk at that level is not enough to "prove" that it was radiation from the nuclear plant that "caused" the particular cancer. It is this result that would be entirely inconsistent with the purposes, policies and maximum dose

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> Although the cancer deaths at SSFL attributable to radiation were dose related, they occurred at doses substantially below those considered permissible by U.S. and international regulatory bodies, thus raising questions about the adequacy of current regulations. The excess relative risk of "low dose" radiation was at least 6 to 8 times greater than risks previously assumed on the basis of atomic bomb survivor data.

Santa Susana Field Laboratory ("SSFL") Epidemiological Study: Report of the Oversight Panel, September, 1997, at page 3.

limitations of Price-Anderson, and it is this result that *Rutherford* addresses and forbids in California. The Ninth Circuit's opinion guarantees that no victim of an off-site violation who thereafter develops cancer will ever be compensated for such injuries in a civil action, an impossibility that the Ninth Circuit recognized in its first opinion. (App. E at 34a-35a).

Yet in an ultimate irony, and recognizing this impossibility, the same Panel, in its second Opinion, still went on to place itself in direct conflict with the California Supreme Court.

IV. The Ninth Circuit has departed from the accepted and usual course of judicial proceedings

The initial, published opinion of the Court was unanimous and states specifically: "We hold the district court's failure to give a proper Rutherford instruction was not harmless error." (App. E at 41a). The order granting reopening was explicitly limited to two issues unrelated to harmless error or the record in connection therewith, and was not even rehearing as to all issues of causation.[5] Because the case was reopened to address unrelated issues, the parties did not again brief, argue or address the record as it relates to harmless error or Respondents' contested Probability of

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[5] The Court, in its Order of January 2, 2001, stated that the petition is "granted as to the issues...Whether California tort law on causation has been preempted by...Price-Anderson" and whether Appellees waived preemption. The Order noted that panel member, Judge Boochever, "concurs and would further grant rehearing as to all issues of causation." (App. H at 60a).

Causation approach. On the prior briefing and argument which did address harmless error, the court unanimously found no harmless error. (App. E at 41a).

In the subsequent opinion, the Court concludes, completely contrary to its prior finding, that failure to give the risk instruction was "harmless error." (App. C at 19a). As a matter of fundamental fairness, if the Court is going to turn its initial holding upside down, the parties ought to have had an opportunity to brief and argue whether the record or medical science actually supports the revised finding. The record does not and it cannot be reconciled with such a finding. The Court was led into manifest error and injustice here by reversing itself without the traditional input from the parties in the form of briefs with record citations and argument. Below the trial judge found that even operating on a standard of showing that radiation from the nuclear plant was a substantial factor in actually causing Mrs. Kennedy's cancer (as opposed to being a substantial factor in adding to her risk), there was enough evidence to go to the jury and he refused to grant a nonsuit on this record.

The procedural blind-siding of the Kennedys here is even more evident from the basis of the Court's finding of harmless error. In its initial opinion, the Ninth Circuit made a factual determination based on its understanding of Respondent's expert testimony, namely that even using Respondent's analysis, Mrs. Kennedy's risk of developing leukemia from San Onofre off-site radiation was 1 in 100,000. The Panel initially stated that such a risk could be a substantial increase in risk, as such a risk spread over the population equals 2,500 deaths. (App. E at 44a). Petitioners did not disagree with this observation, even based on Respondents' very controversial assumptions as to the actual level of risk, since the undisputed science, as admitted at trial

by Respondents' experts, is that there is no safe level of radiation below which cancer cannot be caused.

At trial Petitioners demonstrated levels of exposure many times higher than Respondents' reductio ad absurdum calculations.[6] There was no agreement to this testimony, which was the subject of cross-examination, and Petitioners never took the position that Respondents' hypotheticals were correct. After filings by the Nuclear Industry and a lobby group sympathetic to the Industry, and after a rehearing on limited specific issues, without giving the parties the opportunity to address the issue of harmless error, the Panel adopted a position completely contrary to the record, and which was controverted at every level. This end-driven result, defies the law of California, Price-Anderson, and the record in this case, while at the same time spells the death of litigation in California for victims of the nuclear industry. This departure from the accepted and usual course of judicial proceedings calls for an exercise of this Court's supervisory power.

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[6] Respondents' hypothetical "probability of causation" calculation was based on exposure by Mrs. Kennedy of just a single "fuel flea", with a minuscule dose, for just ten days of contact with the skin. In contrast, evidence at trial demonstrated that particles were found at far greater levels of activity. Furthermore, Respondents' own experts admitted that they did not know how many fuel fleas Mrs. Kennedy ingested or inhaled, where they came into contact with Mrs. Kennedy, and for how long they came into contact for. The statement upon which the reversal of the previous unanimous view of this case is based, that Respondents' probability of causation estimate of 1 in 100,000 was based on Kennedy's "uncontroverted" exposure scenario, is simply wrong.

CONCLUSION

Without a *Rutherford* risk instruction, a plaintiff can never succeed is showing that she encountered an invisible microscopic particle or particles of radiation ten years before, when Respondents did no surveys, no monitoring, and kept almost no records of off-site exposures to individuals. Even if such a showing could be made, a plaintiff could not show it was the particular radiation hit from the plant that started the cancer process. Thus, even though admittedly in many cases, defendants actually will have caused, and know they caused leukemias, in any particular case, plaintiffs cannot meet the burden of proof under California's traditional jury instructions, and in all cases, defendants, with a rational jury, conscientiously attempting to follow the law, will be protected from the consequences of their actions.

The California Supreme Court rejected a legal rule that guaranteed defendants would compensate no one who developed cancer after exposure to the toxin, as a consequence of the limits of science. That rule is set forth in *Rutherford*, and is mandated in this case. Any causation rule other than *Rutherford*, in a case such as this, lets the defendant nuclear operators flout the law of Price-Anderson and of California. If Respondents are going to be in the business of commercial use of nuclear power, and admittedly violate NRC off-site limits designed to protect the public, they must be prepared to compensate the victims of their actions, such as Ellen Kennedy.

The Ninth Circuit has erred in failing to apply a causation instruction mandated by the California Supreme Court, and by assigning a quantitative numerical risk assessment in determining causation, which is contrary to both Price-Anderson, and controlling California law. This Petition

for a Writ of Certiorari should be granted so that this Court can re-establish the federal statutory and state law framework for Price-Anderson cases.

For the foregoing reasons, the Petition for a Writ of Certiorari should be grated.

Respectfully submitted,

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APPENDIX A

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, December 28, 2001]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy, *Plaintiffs-Appellants*,	)
v.	)
Southern California Edison Company; Combustion Engineering, Inc., *Defendants-Appellees*.	)

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

ORDER

Appellants' Motion for Permission to File a Reply on Petition for Rehearing is GRANTED. The Reply received by this court on November 27, 2001 is ordered filed.

The panel voted to deny the Petition for Rehearing. Judge Boochever recommended denying the Petition for Rehearing En Banc and Judges Hawkins and Thomas voted to deny the En Banc petition.

The full court was advised of the petition for rehearing en banc and no active judge requested a vote on whether to rehear the matter en banc. Fed. R. App. P. 35.

The petition for rehearing and the petition for rehearing en banc are DENIED.

APPENDIX B

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, October 26, 2001]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy,
Plaintiffs-Appellants,

v.

Southern California Edison Company; Combustion Engineering, Inc.,
Defendants-Appellees.

Before:
BOOCHEVER, HAWKINS, and THOMAS, Circuit Judges.

ORDER

Appellees shall file a response to Appellants' Petition for Rehearing and Rehearing En Banc, not exceeding fifteen (15) pages in length. Fifty (50) copies of the brief shall be filed within twenty-one (21) days of the filed date of this Order.

APPENDIX C

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

No. 98-56157

[Filed, September 26, 2001]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy,
Plaintiffs-Appellants,

v.

Southern California Edison Company; Combustion Engineering, Inc.,
Defendants-Appellees.

On Appeal from the
United States District Court
for the Southern District of California
D.C. No. CV-95-03769-NAJ/RBB
Napoleon A. Jones, District Judge, Presiding

JUDGES:
Before: Robert Boochever, Michael Daly Hawkins, and Sidney R. Thomas, Circuit Judges.

OPINION

PER CURIAM:

This appeal requires us to examine California tort and products liability law as made expressly applicable to actions in federal court for claims of injury arising out of nuclear power plant incidents. Specifically, we must decide whether the district court erred in (1) refusing to give a jury instruction under *Rutherford v. Owens-Illinois, Inc.*, 16 Cal. 4th 953, 941 P.2d 1203 (Cal. 1997), in a case involving a single defendant who raises alternative possible sources of injury as a defense; and (2) dismissing claims under California product liability law. For the reasons set forth below, we affirm the district court's result.

BACKGROUND

Ellen Kennedy died in 1996 of chronic myelogenous leukemia ("CML").[1] She was forty-three years old. The

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[1] [CML] results from an acquired (not inherited) injury to the DNA of a stem cell in the [bone] marrow. This injury is not present at birth ....The frequency of the disease increases with age from about one in 1,000,000 children in the first 10 years of life to one in 100,000 people at age 50, to one in 10,000 people at age 80 or above. Disease Information: Chronic Myelogenous Leukemia, The Leukemia & Lymphoma Society, available at www.leukemialymphoma.org/all_mat_detail.adp?item_id=2119&sort_order=4&cat_id=.

plaintiffs/appellants are her husband, Joe, and their four children (collectively referred to as "Kennedy"). From 1982 to 1990, Mr. Kennedy worked as a machinist for Southern California Edison Company ("Cal Edison") at the company's San Onofre Nuclear Generating Station ("SONGS").

Plaintiffs sued Cal Edison in federal court, asserting jurisdiction pursuant to the Price-Anderson Act, 42 U.S.C. §§2011-2297, and seeking damages for Ellen Kennedy's wrongful death, alleging negligence on the part of Cal Edison that resulted in her exposure to radiation from SONGS. Additionally, Kennedy brought a products liability claim against Combustion Engineering, Inc. for the alleged faulty production of nuclear fuel rods. The theory of both claims was that Joe Kennedy inadvertently brought home microscopic particles of radioactive material, known as "fuel fleas," from the power plant on his clothing, hair, tools, etc. These fuel fleas, which according to Kennedy contained dosages in excess of the maximum allowable by federal regulations, allegedly came in contact with Mrs. Kennedy and caused her fatal cancer.

The district court granted Combustion Engineering's motion to dismiss all the products liability claims against it. The court reasoned that, inasmuch as Mrs. Kennedy was not a user or consumer of the nuclear fuel rods Combustion Engineering produced, Combustion Engineering could not have reasonably foreseen that Mrs. Kennedy would be injured by its product.

Kennedy initially sought a burden-shifting order stating that once Kennedy made an initial showing of Mrs. Kennedy's exposure to radiation from SONGS, Cal Edison

and Combustion Engineering would then bear the burden of proving their conduct was not a substantial factor in causing Mrs. Kennedy's death. The district court denied this request.

In August 1997, the California Supreme Court issued its opinion in *Rutherford v. Owens-Illinois, Inc.*, 16 Cal. 4th 953, 941 P.2d 1203 (Cal. 1997), a products liability case brought by the estate of a worker who had been exposed to asbestos-containing products and subsequently died of lung cancer. *Rutherford* dealt in large part with the proper jury instructions on causation to be given when multiple potential causes of harm exist. In light of the decision, Kennedy requested a causation instruction "consistent with *Rutherford*." The district court denied Kennedy's request. Kennedy again requested a *Rutherford* instruction and submitted a proposal twice more before trial. Both requests were again denied.

After a fact-intensive, five-week trial, the jury returned a unanimous verdict in favor of Cal Edison and Combustion Engineering. The district court denied Kennedy's motion for a new trial. The appeal was argued and submitted on February 10, 2000. The initial panel opinion was filed on July 20, 2000. After Cal Edison filed a petition for rehearing, with numerous amici in support, we granted rehearing and held a second round of oral argument. Jurisdiction lies pursuant to 28 U.S.C. §1291.

STANDARD OF REVIEW

Jury instructions challenged as a misstatement of law are reviewed de novo. *City of Long Beach v. Standard Oil Co.*, 46 F.3d 929, 933 (9th Cir. 1995). We review de novo both a dismissal without leave to amend and a dismissal with

leave to amend. *San Pedro Hotel Co. v. City of Los Angeles*, 159 F.3d 470, 477 (9th Cir. 1998); *Sameena, Inc. v. United States Air Force*, 147 F.3d 1148, 1151 (9th Cir. 1998).

ANALYSIS

Under the Price-Anderson Act ("Price-Anderson" or "the Act"), our decision is guided by the substantive law of California. Price-Anderson provides federal jurisdiction over lawsuits for injuries arising out of a "nuclear incident."[2] Under such "public liability actions,"[3] the "substantive rules for decision ... shall be derived from the law of the State in which the nuclear incident involved occurs, unless such law is inconsistent with the provisions of [section 2210]." 42 U.S.C. §2014(hh).

Enacted in 1957 during the fledgling days of the nuclear power industry, Price-Anderson has a dual purpose: "to protect the public and to encourage the development of the atomic energy industry." 42 U.S.C. §2012(i); *Duke Power Co. v. Carolina Envtl. Study Group, Inc.*, 438 U.S. 59, 64,

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[2] A "nuclear incident" includes "any occurrence ...within the United States causing ...[any] sickness, disease, or death ...resulting from the radioactive, toxic, explosive, or other hazardous properties of source, special nuclear, or by-product material." 42 U.S.C. §2014(q). It is undisputed that Mrs. Kennedy's death constitutes a "nuclear incident" for purposes of Price-Anderson.

[3] "Public liability" is defined as "any legal liability arising out of or resulting from a nuclear incident." 42 U.S.C. §2014(w). A "public liability action" is "any suit asserting public liability." 42 U.S.C. §2014(hh). It is undisputed that Kennedy's lawsuit is a "public liability action."

57 L. Ed. 2d 595, 98 S. Ct. 2620 (1978). The Act accomplishes this by providing certain licensees with a system of private insurance, government indemnification, and limited liability for certain nuclear tort claims. *See El Paso Natural Gas Co. v. Neztsosie*, 136 F.3d 610, 616 (9th Cir. 1998), *rev'd on other grounds*, 526 U.S. 473, 143 L. Ed. 2d 635, 119 S. Ct. 1430 (1999); *see also* S. Rep. No. 218, 100th Cong., 1st Sess. 2 (1987), *reprinted in 1988* U.S.C.C.A.N. 1424, 1476, 1477.

Before its amendment in 1988, Price-Anderson provided the federal courts with original and removal jurisdiction only when the accident at issue was "an extraordinary nuclear occurrence" as defined by the Act at 42 U.S.C. §2014(j). Responding to a flurry of lawsuits in federal and state courts generated by the 1979 nuclear accident at Three Mile Island, which was not considered "an extraordinary nuclear occurrence," Congress added section 2014(hh) to the Act, thereby providing the federal courts with original and removal jurisdiction for the broader category of "nuclear incidents." *Neztsosie*, 526 U.S. at 477.

I. *Rutherford* Instruction

A. Background and Applicability

The basic contours of California tort law, in the context of medical injuries with multiple possible causes, are outlined in *Jones v. Ortho Pharm. Corp.*, 163 Cal. App. 3d 396, 209 Cal. Rptr. 456 (Ct. App. 1985). *Jones* involved cancer alleged to have resulted from a contraceptive pill. The California Court of Appeal stated:

> The law is well settled that in a personal injury action causation must be proven within a reasonable medical probability based upon competent expert testimony. Mere possibility alone is insufficient to establish a prima facie case .... A possible cause only becomes "probable" when, in the absence of other reasonable causal explanations, it becomes more likely than not that the injury was a result of its action. This is the outer limit of inference upon which an issue may be submitted to the jury.

Id. at 460.

The Book of Approved Jury Instructions for California ("BAJI") provides two general instructions on causation for cases involving injuries with multiple potential causes. It was these two instructions -- BAJI 3.76 and 3.77 -- that the district court provided to the jury, neither of which was objected to by any of the parties. BAJI 3.76 provides a definition for "cause:" "The law defines cause in its own particular way. A cause of injury, damage, loss or harm is something that is a substantial factor in bringing about an injury, damage, loss or harm." The other standard jury instruction, BAJI 3.77, pertains to multiple causation. It states:

> There may be more than one cause of an injury. When conduct of two or more persons or conduct and a defective product contributes concurrently as causes of an injury, the conduct of each is a cause of the injury regardless of the extent to which each

> contributes to the injury. A cause is concurrent if it was operative at the moment of injury and acted with another cause to produce the injury.

Rutherford addressed the adequacy of these instructions and altered the landscape of California tort law, as it applies to the burden of proof to establish causation for asbestos-induced cancer, when it held that BAJI 3.76 and 3.77 must be augmented by an additional instruction. 941 P.2d at 1223. Though the court reiterated traditional California tort principles on causation and cited *Jones*'s "reasonable medical probability" requirement with approval, *see id.* at 1214, 1219 n. 1, it cited four factors in asbestos-related cancer cases that necessitated a departure from the standard jury instructions on causation.

First, the court noted that "there is scientific uncertainty regarding the biological mechanisms by which inhalation of certain microscopic fibers of asbestos leads to lung cancer ...." *Id.* at 1218. Second, it discussed the uncertainty that "frequently exists" whether a plaintiff was even exposed to dangerous asbestos fibers produced, distributed or installed by a particular defendant. The court was particularly concerned with the long latency periods of asbestos-related cancers and the many different asbestos-containing products that may have been used at the same time and in the same workplace. *See id.* Third, the court stated that the "question arises whether the risk of cancer created by ...exposure to a particular asbestos-containing product was significant enough to be considered a legal cause of the disease." *Id.* Finally, the court noted the "impossibility" of proving "the unknowable path of a given asbestos fiber." *Id.* at 1219.

Despite these difficulties of proof, the California Supreme Court rejected the argument that the burden of proving causation should shift to the defendants after the plaintiffs had proven exposure.[4] The court reasoned that the fundamental justification for a shifting of the burden -- that without such a shift all defendants might escape liability and the plaintiff be left "remediless" -- is absent in asbestos-related cancer cases. *Id.* at 1220 (quoting *Summers v. Tice*, 33 Cal. 2d 80, 199 P.2d 1, 4 (Cal. 1948)). Moreover, the court pointed out that in asbestos cases, unlike traditional alternative liability cases, the complete set of possible tortfeasors is not before the court, and that given the wide ranging toxicities of different asbestos-containing products, the tortfeasors that are before the court do not display the "same symmetry of comparative fault or indivisible injury" that are the trademarks of alternative liability cases. *Id.* (internal quotations omitted). Having rejected burden-shifting, the California Supreme Court was presented with a Gordian knot of its own making: traditional causation principles presented asbestos-related cancer patients with insuperable barriers to recovery, yet the court had rejected alternative liability as being unsuited for these types of cases.

Rutherford cut the knot by altering, rather than shifting, the plaintiff's burden. The court held that

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[4] At the underlying trial in *Rutherford*, the plaintiffs had originally requested a burden-shifting instruction based on an alternative liability theory that the California Supreme Court first approved in the celebrated case of *Summers v. Tice*, 33 Cal. 2d 80, 199 P.2d 1 (Cal. 1948).

> plaintiffs may prove causation in asbestos-related cancer cases by demonstrating that the plaintiff's exposure to defendant's asbestos-containing product in reasonable medical probability was a substantial factor in contributing to the aggregate dose of asbestos the plaintiff or decedent inhaled or ingested, and hence to the risk of developing asbestos-related cancer, without the need to demonstrate that fibers from the defendant's particular product were the ones, or among the ones, that actually produced the malignant growth.

Id. at 1219 (footnote omitted).

The burden now established, the court turned to the standard jury instructions, BAJI 3.76 and 3.77, and found them "insufficient for [the] purpose" of ensuring that jurors know the "precise contours" of this newly-crafted burden. *See id.* Specifically, the court found that BAJI 3.76 and 3.77

> say nothing, however, to inform the jury that, in asbestos-related cancer cases, a particular asbestos-containing product is deemed to be a substantial factor in bringing about the injury if its contribution to the plaintiff or decedent's risk or probability of developing cancer was substantial.
>
> Without such guidance, a juror might well conclude that the plaintiff needed to prove that fibers from the defendant's product were a

> substantial factor actually contributing to the development of the plaintiff's or decedent's cancer. In many cases, such a burden will be medically impossible to sustain, even with the greatest possible effort by the plaintiff, because of irreducible uncertainty regarding the cellular formation of an asbestos-related cancer.

Id. at 1219-20.

To rectify these shortcomings, the court held that in addition to BAJI 3.76 and 3.77, the jury must also be instructed that

> the plaintiff need not prove that fibers from the defendant's product were the ones, or among the ones, that actually began the process of malignant cellular growth. *Instead, the plaintiff may meet the burden of proving that exposure to defendant's product was a substantial factor causing the illness by showing that in reasonable medical probability it was a substantial factor contributing to the plaintiff's or decedent's risk of developing cancer.*

Id. at 1223 (emphasis added). It is this passage upon which the Kennedy requests for a *Rutherford* instruction were based.

Because we conclude that the failure to give a *Rutherford* instruction was harmless error on these facts, it is not necessary for us to decide whether there is an obligation

to give such an instruction in cases involving exposure to substances other than asbestos.

B. Harmless Error Analysis

Harmless error review applies to jury instructions in civil cases. *See, e.g., Caballero v. City of Concord*, 956 F.2d 204, 206 (9th Cir. 1992) ("An error in instructing the jury in a civil case requires reversal unless the error is more probably than not harmless."). This review is "less stringent" than review for harmless error in a criminal case, but "more stringent" than review for sufficiency of the evidence. *Id.* at 207; *City of Long Beach*, 46 F.3d at 933 (citing *Caballero*). In harmless error review, unlike sufficiency of the evidence review, the "prevailing party is not entitled to have disputed factual issues resolved in his favor because the jury's verdict may have resulted from a misapprehension of law rather than from factual determinations in favor of the prevailing party." *Caballero*, 956 F.2d at 207 (emphasis added).

After careful consideration, we overturn our prior determination and hold that the district court's failure to give a proper *Rutherford* instruction was harmless error. "[A]n error in a trial court's jury instructions relating to the parties' respective burdens of proof ordinarily [requires] reversal." *Larez v. Holcomb*, 16 F.3d 1513, 1518 (9th Cir. 1994). *But see Mockler v. Multnomah County*, 140 F.3d 808, 812-14 (9th Cir. 1998) (improper instruction on plaintiff's burden of proof held harmless when evidence supported verdict for plaintiff in any event).

In order to sustain their burden of proof, Kennedy needed to prove by a preponderance of the evidence that the

radiation from SONGS was a "substantial factor "in causing Mrs. Kennedy's CML. In *Rutherford*, the California Supreme Court cautioned that "[u]ndue emphasis should not be placed on the term 'substantial.'" *Rutherford*, 941 P.2d at 1214. As discussed above, this standard minimally requires that the contribution of the individual cause be more than negligible or theoretical. *Id.* at 1219.

Under a preponderance of the evidence standard, the jury is only required to believe that "the existence of a fact is more probable than its nonexistence." *Concrete Pipe and Prods. of Cal., Inc. v. Constr. Laborers Pension Trust for So. Cal.*, 508 U.S. 602, 622, 124 L. Ed. 2d 539, 113 S. Ct. 2264 (1993). Therefore, all the jury need have concluded, if given a *Rutherford* instruction, was that it was more probable than not that in reasonable medical likelihood the SONGS radiation was a "substantial factor" in contributing to her risk of developing CML. The SONGS radiation could only have been a "substantial factor" if it played more than an "infinitesimal" or "theoretical" part in bringing about Mrs. Kennedy's CML. On this record, no reasonable juror could have made this finding.

At trial, the defendants introduced uncontroverted expert testimony that, *even if Mrs. Kennedy was exposed to "fuel fleas" as under Kennedy's exposure scenario, there is only a one in 100,000 chance that her CML was caused by the exposure.*[5] Indeed the testimony went further -- *even*

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[5] This calculation is known as the Probability of Causation ("PC"). PC is to be distinguished from calculations quantifying increased risk. PC is an ex post calculation, i.e., we know that the individual has actually contracted the disease. The calculation reflects the odds that the extant disease was caused by the particular

assuming that we knew for certain that Mrs. Kennedy's CML was caused by radiation (rather than some other source), there would only be a one in 30,000 chance that "fuel flea" radiation would have been the actual cause.[6] On these facts, the contribution of the "fuel fleas," even assuming exposure and ingestion and with full knowledge that the person in question actually developed CML, only played "an 'infinitesimal' or 'theoretical' part in bringing about [Mrs. Kennedy's] injury." *Bockrath v. Aldrich Chem. Co.*, 21 Cal. 4th 71, 980 P.2d 398, 403 (Cal. 1999) (quoting *Rutherford,* 941 P.2d at 1203). Because no reasonable jury could have found that the "fuel fleas "were a "substantial factor" in

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exposure in question. The PC that Mrs. Kennedy's CML was caused by her exposure as alleged is one in 100,000. By contrast, the ex ante risk calculation that someone (not yet sick) exposed to "fuel fleas," as Mrs. Kennedy allegedly was, would develop CML attributable to that exposure is less than one in 20,000,000.

It has been urged by distinguished amici in the scientific community that these calculations are themselves based on probabilities so remote as to represent merely theoretical conclusions. The point is not that these numbers are per se unreliable, but that when dealing with the effects of dosages as small as those presented by the "fuel fleas," precision is not currently attainable. Since the calculations present such remote causation data, we advance no view on the issue: whether the PC is actually one in 100,000, one in 92,000, or one in 108,000, makes little difference in this case. There is no argument by Kennedy, and amici do not caution, that the PC calculation is so imprecise as to lead to a deviance that could present a legally viable causation scenario.

[6] The highest percentage of CML cases any peer-reviewed article in the literature suggests is caused by radiation is five to ten percent. The cause of the remaining ninety to ninety-five percent of CML cases is currently unknown.

causing Mrs. Kennedy's CML, the failure to give a *Rutherford* instruction was harmless error.

II. Products Liability Claims

Under California products liability law,

> a manufacturer may be held strictly liable in tort for placing a defective product on the market if that product causes personal injury, provided that the injury resulted from a use of the product that was reasonably foreseeable by the defendants. This doctrine of strict liability extends to products which have design defects, manufacturing defects, or warning defects.

Sparks v. Owens-Illinois, Inc., 32 Cal. App. 4th 461, 38 Cal. Rptr. 2d 739, 745 (Ct. App. 1995) (internal quotation and citation omitted) (emphasis added). Because Kennedy did not meet their burden on causation, we need not address whether California strict liability applies under the Act or whether Mrs. Kennedy was a foreseeable victim. Since Kennedy has not adequately proven causation, their claim fails under both negligence and strict liability regimes.

CONCLUSION

Based on Cal Edison's uncontroverted evidence at trial, no reasonable jury could have found that the "fuel fleas" were a substantial factor in causing Mrs. Kennedy's CML, even under Kennedy's exposure scenario. Therefore, the district court's error in not giving a *Rutherford* instruction was harmless. Further, since causation was not adequately

proven, we need not consider the applicability of California strict liability law.

AFFIRMED.

APPENDIX D

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 98-56157

[Filed September 19, 2001]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy,
Plaintiffs-Appellants,

v.

Southern California Edison Company; Combustion Engineering, Inc.,
Defendants-Appellees.

ORDER

Before:
BOOCHEVER, HAWKINS, and THOMAS,
Circuit Judges.

The Opinion filed July 20, 2000, and appearing at 219 F.3d 988 (9th Cir.2000), is withdrawn.

APPENDIX E

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

No. 98-56157

[Filed July 20, 2000]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy,
Plaintiffs-Appellants,

v.

Southern California Edison Company; Combustion Engineering, Inc.,
Defendants-Appellees.

On Appeal from the
United States District Court
for the Southern District of California
D.C. No. CV-95-03769-NAJ/RBB
Napoleon A. Jones, District Judge, Presiding

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

MICHAEL DALY HAWKINS, Circuit Judge:

This appeal requires us to examine California tort and products liability law as made specifically applicable to actions in federal court for claims of injury arising out of nuclear power plant incidents. Specifically, we must decide whether the district court erred in (1) refusing to give a jury instruction under *Rutherford v. Owens-Illinois, Inc.*, 16 Cal.4th 953, 67 Cal.Rptr.2d 16, 941 P.2d 1203 (1997), in a case involving a single defendant who raises alternative possible sources of the injury as a defense; and (2) dismissing claims under California products liability law. For the reasons set forth below, we reverse and remand the case for a new trial.

BACKGROUND

Ellen Kennedy died in 1996 of chronic myelogenous leukemia ("CML"), a rare form of cancer. She was 43 years old. The plaintiffs/appellants are her husband, Joe, and their four children (collectively referred to as "Kennedy"). From 1982 to 1990, Mr. Kennedy worked as machinist for Southern California Edison Company ("Cal Edison") at the company's San Onofre Nuclear Generating Station ("SONGS").

The plaintiffs sued Cal Edison in federal court, asserting jurisdiction pursuant to the Price-Anderson Act, 42 U.S.C. §2011 et seq., and seeking damages for Ellen Kennedy's wrongful death. The action alleged that her

terminal CML resulted from negligence on the part of Cal Edison that resulted in her exposure to radiation from SONGS. Additionally, Kennedy sued Combustion Engineering, Inc., under a products liability cause of action, for the alleged faulty production of nuclear fuel rods. The theory of the case was that Joe Kennedy inadvertently brought home microscopic particles of radioactive material, known as "fuel fleas," from the power plant on his clothing, hair, tools, etc. These fuel fleas, which according to Kennedy contained radiation dosages in excess of the maximum allowable by federal regulations, came in contact with Mrs. Kennedy and caused her fatal cancer. On March 20, 1997, the district court granted Combustion Engineering's motion to dismiss all the products liability claims against it. The court reasoned that, inasmuch as Mrs. Kennedy was not a user or consumer of the nuclear fuel rods Combustion Engineering produced, Combustion Engineering could not have reasonably foreseen that Mrs. Kennedy would be injured by its product. Kennedy initially sought a burden-shifting order stating that once Kennedy made an initial showing of Mrs. Kennedy's exposure to radiation from SONGS, Cal Edison and Combustion Engineering would then bear the burden of proving their conduct was not a substantial factor in causing Mrs. Kennedy's death. On April 2, 1997, the district court denied this request.

In August 1997, the California Supreme Court issued its opinion in Rutherford, a products liability action brought by the estate of a worker who had been exposed to asbestos-containing products and subsequently died of lung cancer. The case, discussed infra, dealt in large part with the proper jury instructions to be given on causation when multiple potential causes of the injury exist. In light of the

decision, Kennedy requested a causation instruction "consistent with Rutherford." On November 14, 1997, the district court denied Kennedy's request. Kennedy requested a Rutherford instruction and submitted a proposal twice more before trial. Both requests were again denied.

On March 6, 1998, after a fact-intensive, five-week trial, the jury returned a unanimous verdict in favor of Cal Edison and Combustion Engineering. On June 9, 1998, the district court denied Kennedy's motion for a new trial. This appeal followed. We have jurisdiction pursuant to 28 U.S.C. §1291.

STANDARD OF REVIEW

Jury instructions challenged as a misstatement of the law are reviewed de novo. *See City of Long Beach v. Standard Oil Co.*, 46 F.3d 929, 933 (9th Cir.1995). We review *de novo* both a dismissal without leave to amend and a dismissal with leave to amend. *See, e.g., San Pedro Hotel Co. v. City of Los Angeles*, 159 F.3d 470, 477 (9th Cir.1998); *Sameena Inc. v. United States Air Force*, 147 F.3d 1148, 1151 (9th Cir.1998).

ANALYSIS

As the case was filed in federal district court under the Price-Anderson Act ("Price-Anderson" or the "Act"), our decision is guided solely by the substantive law of California. Price-Anderson provides federal jurisdiction over lawsuits for

injuries arising out of a "nuclear incident."[1] Under such "public liability actions,"[2] the "substantive rules for decision ... shall be derived from the law of the State in which the nuclear incident involved occurs, unless such law is inconsistent with the provisions of [section 2210]." 42 U.S.C. §2014(hh).[3]

Enacted in 1957 during the fledgling days of the nuclear power industry, Price-Anderson had a dual purpose: "to protect the public and to encourage the development of the atomic energy industry." 42 U.S.C. §2012(i); *Duke Power Co. v. Carolina Envtl. Study Group, Inc.*, 438 U.S. 59, 64, 98 S.Ct. 2620, 57 L.Ed.2d 595 (1978). The Act accomplishes this by providing certain federal licensees with a system of private insurance, Government indemnification, and limited liability for certain nuclear tort claims. *See El Paso Natural Gas Co. v. Neztsosie*, 136 F.3d 610, 616 (9th

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[1] A "nuclear incident" includes "any occurrence ... within the United States causing ... any sickness, disease, or death...." 42 U.S.C. §2014(q).

It is undisputed that Mrs. Kennedy's death constitutes a "nuclear incident" for purposes of Price-Anderson.

[2] "Public liability" is defined as "any legal liability arising out of or resulting from a nuclear incident." A "public liability action" is "any suit asserting public liability." 42 U.S.C. §§2014(w), (hh). It is undisputed that Kennedy's lawsuit is a "public liability action."

[3] Cal Edison and Combustion Engineering do not argue that this conclusion is inconsistent with the purposes of Price-Anderson; rather, their argument is based solely on the interpretation of California law.

Cir.1998), *rev'd on other grounds*, 526 U.S. 473, 119 S.Ct. 1430, 143 L.Ed.2d 635 (1999); *see also* S.Rep. No. 218, 100th Cong., 1st Sess. 2 (1987), reprinted in 1988 U.S.C.C.A.N. 1424, 1476, 1477.

Before its amendment in 1988, Price-Anderson provided the federal courts with original and removal jurisdiction only when the accident at issue was "an extraordinary nuclear occurrence" as defined by the Act. *See* 42 U.S.C. §2014(j) (defining "extraordinary nuclear occurrence"). Responding to a flurry of lawsuits in federal and state courts generated by the 1979 nuclear accident at Three Mile Island, which was not considered an extraordinary nuclear occurrence, Congress added section 2014(hh) to the Act, thereby providing the federal courts with original and removal jurisdiction for the broader category of "nuclear incidents." *See Neztsosie*, 526 U.S. at 477, 119 S.Ct. 1430.

I. *Rutherford* Instruction

A. Background and Applicability

The basic contours of California tort law, in the context of medical injuries with multiple possible causes, are outlined in *Jones v. Ortho Pharm. Corp.*, 163 Cal.App.3d 396, 209 Cal.Rptr. 456 (1985). Jones involved cancer allegedly induced as a result of taking a contraceptive pill. The California Court of Appeal stated:

> The law is well settled that in a personal injury action causation must be proven within a reasonable medical probability based upon competent expert testimony. Mere possibility

> alone is insufficient to establish a prima facie case.... A possible cause only becomes "probable" when, in the absence of other reasonable causal explanations, it becomes more likely than not that the injury was a result of its action. This is the outer limit of inference upon which an issue may be submitted to the jury.

Id. at 460.

The Book of Approved Jury Instructions for California ("BAJI") provides two general instructions on causation for cases involving injuries with multiple potential causes. It was these two instructions--BAJI 3.76 and 3.77--that the district court provided to the jury, neither of which was objected to by any of the parties. BAJI 3.76 provides a definition for "cause": "The law defines cause in its own particular way. A cause of injury, damage, loss or harm is something that is a substantial factor in bringing about an injury, damage, loss or harm." The other standard jury instruction, BAJI 3.77, pertains to multiple causation. It states:

> There may be more than one cause of an injury. When conduct of two or more persons or conduct and a defective product contributes concurrently as causes of an injury, the conduct of each is a cause of the injury regardless of the extent to which each contributes to the injury. A cause is concurrent if it was operative at the moment of injury and acted with another cause to produce the injury.

Rutherford addressed the adequacy of these instructions and altered the landscape of California tort law, as it applies to the burden of proof to establish causation for asbestos-induced cancer, when it held that BAJI 3.76 and 3.77 must be augmented by an additional instruction. *See* 67 Cal.Rptr.2d 16, 941 P.2d at 1223. Though the court reiterated traditional California tort principles on causation and cited *Jones's* "reasonable medical probability" requirement with approval, *see id.* at 1214, 1219 n. 1, it cited four factors in asbestos-related cancer cases that necessitated a departure from the standard jury instructions on causation.

First, the court noted that "there is scientific uncertainty regarding the biological mechanisms by which inhalation of certain microscopic fibers of asbestos leads to lung cancer...." *Id.* at 1218. Second, it discussed the uncertainty that "frequently exists" whether a plaintiff was even exposed to dangerous asbestos fibers produced, distributed or installed by a particular defendant. The court was particularly concerned with the long latency periods of asbestos-related cancers and the many different asbestos-containing products that may have been used at the same time and in the same workplace. *See id.* Third, the court stated that the "question arises whether the risk of cancer created by ... exposure to a particular asbestos-containing product was significant enough to be considered a legal cause of the disease." *Id.* Finally, the court noted the "impossibility" of proving "the unknowable path of a given asbestos fiber." *Id.* at 1219.

Despite these difficulties of proof, the California Supreme Court rejected the argument that the burden of proving causation should shift to the defendants after the

plaintiffs had proven exposure to asbestos-containing products.[4] The court reasoned that the fundamental justification for a shifting of the burden--that without such a shift all defendants might escape liability and the plaintiff be left "remediless"--is absent in asbestos-related cancer cases. *Id.* at 1220 (quoting *Summers v. Tice*, 33 Cal.2d 80, 199 P.2d 1, 4 (1948)). Moreover, the court pointed out that in asbestos cases, unlike traditional alternative liability cases, the complete set of possible tortfeasors is not before the court, and that given the wide ranging toxicities of different asbestos-containing products, the tortfeasors that are before the court do not display the "same symmetry of comparative fault or indivisible injury" that are the trademarks of alternative liability cases. *See id.* (internal quotations omitted). Having rejected burden-shifting, the California Supreme Court was presented with a Gordian knot of its own making: traditional causation principles presented asbestos-related cancer patients with insuperable barriers to recovery, yet the court had rejected alternative liability as being unsuited for these types of cases.

Rutherford cut the knot by altering, rather than shifting, the plaintiff's burden. The court held that

> plaintiffs may prove causation in asbestos-related cancer cases by demonstrating that the plaintiff's exposure to defendant's

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[4] At the underlying trial in Rutherford, the plaintiffs had originally requested a burden-shifting instruction based on an alternative liability theory that the California Supreme Court first approved in the celebrated case of *Summers v. Tice*, 33 Cal.2d 80, 199 P.2d 1 (1948).

> asbestos-containing product in reasonable medical probability was a substantial factor in contributing to the aggregate dose of asbestos the plaintiff or decedent inhaled or ingested, and hence to the risk of developing asbestos-related cancer, without the need to demonstrate that fibers from the defendant's particular product were the ones, or among the ones, that actually produced the malignant growth.

Id. at 1219 (footnote omitted).

The burden now established, the court turned to the standard jury instructions, BAJI 3.76 and 3.77, and found them "insufficient for [the] purpose" of ensuring that jurors know the "precise contours" of this newly- crafted burden. *See id.* Specifically, the court found that BAJI 3.76 and 3.77

> say nothing, however, to inform the jury that, in asbestos-related cancer cases, a particular asbestos-containing product is deemed to be a substantial factor in bringing about the injury if its contribution to the plaintiff or decedent's risk or probability of developing cancer was substantial.
>
> Without such guidance, a juror might well conclude that the plaintiff needed to prove that fibers from the defendant's product were a substantial factor actually contributing to the development of the plaintiff's or decedent's cancer. In many cases, such a burden will be

> medically impossible to sustain, even with the greatest possible effort by the plaintiff, because of irreducible uncertainty regarding the cellular formation of an asbestos-related cancer. *Id.* at 1219-20.

To rectify these shortcomings of the standard instructions in asbestos-related cancer cases, the court then held that in addition to BAJI 3.76 and 3.77, the jury must also be instructed that

> the plaintiff need not prove that fibers from the defendant's product were the ones, or among the ones, that actually began the process of malignant cellular growth. *Instead, the plaintiff may meet the burden of proving that exposure to defendant's product was a substantial factor causing the illness by showing that in reasonable medical probability it was a substantial factor contributing to the plaintiff's or decedent's risk of developing cancer.*

Id. at 1203 (emphasis added). It is this passage upon which Kennedy based his repeated requests for a *Rutherford* instruction.

We must now decide whether *Rutherford* is applicable to the instant case. We hold that it is.

We begin by noting that the California Supreme Court has applied *Rutherford* to claims involving exposure to substances other than asbestos. In *Bockrath v. Aldrich*

Chemical Co., 21 Cal.4th 71, 86 Cal.Rptr.2d 846, 980 P.2d 398 (1999), it applied *Rutherford* to a cancer claim based on exposure to multiple workplace chemicals. Accordingly, we find nothing in California's jurisprudence that would exclude cases of CML after exposure to radioactive particles from *Rutherford 's* purview.[5]

The more difficult question is whether *Rutherford* is applicable in single-defendant cases. For the reasons set forth below, we hold that *Rutherford* does apply to single-defendant hazardous substance cases where the defense of alternative possible causes is raised.

The limited number of cases applying *Rutherford* have all involved multiple defendants, and appellees argue that this is a necessary requirement for a *Rutherford* instruction. We disagree. We find little relevant distinction between a *Rutherford* case with multiple defendants, each of whose products may have been a substantial factor in causing the plaintiff's injury, and a case in which a single defendant argues that the plaintiff cannot show causation because there exist other potential sources that may have been the legal cause of the harm.

In both circumstances, the plaintiff is faced with the same hurdles that the California Supreme Court identified as making proof of causation, absent the *Rutherford* instruction,

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[5] Indeed, like asbestos-related cancer, CML also has a long latency period. Additionally, it is impossible to determine that a particular dose of radiation initiated the CML process, just as it is impossible to trace asbestos-related cancer back to a given asbestos fiber.

nearly impossible. On a scientific level, the uncertainty regarding the biological mechanisms by which asbestos leads to lung cancer, *see Rutherford*, 941 P.2d at 1218, parallel the medical uncertainties surrounding the cause and effect relationship between CML and radiation. And, it is just as impossible to prove the course of radiation as it is to prove the "unknowable path of a given asbestos fiber." *Id.* at 1219.

More importantly, by choosing to raise alternative sources of the injury as a defense, a defendant creates the need for a *Rutherford* instruction. Just as the presence of multiple defendants in an asbestos-related cancer case raises the question of "whether the risk of cancer created by ... exposure to a particular asbestos-containing product was significant enough to be considered a legal cause of the disease," *id.* at 1218, so too does the proffering of alternative causes of CML by a single defendant. In both scenarios a given defendant is making essentially the same argument: the plaintiff cannot prove that his injury came from a specific source (i.e. the defendant), when multiple other potential sources exist, whether they be another asbestos-related defendant or something altogether different, such as cigarette smoking or radiation from the sun in the case of CML.

While the instant case has two defendants, neither argued that the other was an independent source of causation. Their defense raised other possible causes of Mrs. Kennedy's CML, none of which was attributable to either of the defendants. In essence, then, Cal Edison and Combustion Engineering operated as a single defendant with respect to the issue of alternative causes of the injury.

B. Correctness of Proffered Instruction and Obligation of the District Court

Having held that a *Rutherford* instruction was required, we now turn to the specific instruction proffered by Kennedy. At oral argument, appellees argued that the requested instruction was not a proper *Rutherford* instruction. We agree.

On two occasions, Kennedy proposed the following instruction, that was to be inserted between BAJI 3.76 and BAJI 3.77:

> In order to prove that radiation from the nuclear power plant was a substantial factor, Plaintiffs do not need to prove that it actually contributed to the development of Ellen Marie Kennedy's cancer. If exposure to radiation from the nuclear power plant in reasonable medical probability contributed to her risk of developing cancer then such exposure was a substantial factor in causing her cancer.

The proposed instruction leaves out a small, but critical, phrase. It states that radiation from SONGS need only have "contributed" to Mrs. Kennedy's risk of developing cancer. We read *Rutherford* to require more. Kennedy's burden is not to show that exposure to radiation in reasonable medical probability "contributed" to a risk of cancer. Rather, it is to demonstrate that the exposure in reasonable medical probability was "a substantial factor" in contributing to the risk of cancer. The omission of this modifier is essential to a proper *Rutherford* instruction.

That the defendant's product must, in reasonable medical probability, be a "substantial factor" in contributing to the risk of cancer was reiterated as necessary to the instruction three times by the *Rutherford* court. *See id.* at 1219 (stating that a plaintiff may prove causation by showing that exposure to defendant's asbestos-containing product "in reasonable medical probability was a substantial factor in contributing to the ... risk of developing asbestos-related cancer") (emphasis added); *id.* at 1220 ("[T]he jury should be told that the plaintiff's or decedent's exposure to a particular product was a substantial factor in causing or bringing about the disease if in reasonable medical probability it was a substantial factor contributing to plaintiff's or decedent's risk of developing cancer.") (emphasis added); *id.* at 1223 ("In conclusion ... the plaintiff may meet the burden of proving that exposure to defendant's product was a substantial factor causing the illness by showing that in reasonable medical probability it was a substantial factor contributing to the plaintiff's or decedent's risk of developing cancer. The jury should be so instructed.") (emphasis added).

Our focus on the "substantial factor" language is not mere quibbling over linguistic technicalities. Although "substantial factor" has not been explicitly defined by the California courts, *Bockrath*, quoting extensively from *Rutherford*, delineated the broad outlines of the term:

> The substantial factor standard is a relatively broad one, requiring only that the contribution of the individual cause be more than negligible or theoretical. Thus, a force which plays only an "infinitesimal' " or " 'theoretical' " part in bringing about injury, damage, or loss is not a

> substantial factor, but a very minor force that does cause harm is a substantial factor

Bockrath, 86 Cal.Rptr.2d 846, 980 P.2d at 403 (internal citations and quotations omitted). The omission of the "substantial factor" language from Kennedy's requested instruction, therefore, would have enabled the jury to have found that radiation from SONGS was the legal cause (i.e., a substantial factor in bringing about the injury, *see supra* BAJI 3.76), of Mrs. Kennedy's death, even if the radiation played only an "infinitesimal" or "theoretical" part in contributing to her risk of CML. Such a result is inconsistent with *Rutherford*.

That the proposed instructions were not entirely correct under *Rutherford* is insufficient to affirm the district court's refusal to instruct the jury properly. Ordinarily, a district court does not err in refusing to give incorrect or misleading instructions. *See, e.g., Mitchell v. Keith*, 752 F.2d 385, 388 (9th Cir.1985).

A district court, however, may have an obligation to correctly instruct the jury even after being presented with an arguably improper instruction that nonetheless directs its attention to an important issue. While this issue has not been expressly decided in this circuit, several of our sister circuits have held that such an obligation does exist. *See Webster v. Edward D. Jones & Co.*, L.P., 197 F.3d 815, 820 (6th Cir.1999) ("Even if an incorrect proposed instruction is submitted which raises an important issue of law involved in light of proof adduced in the case, it becomes the duty of the trial court to frame a proper instruction on the issue raised...."); *Wilson v. Maritime Overseas Corp.*, 150 F.3d 1,

10 (1st Cir.1998) ("If the request directs the court's attention to a point upon which an instruction to the jury would be helpful, the court's error in failing to charge may not be excused by technical defects in the request.") (quoting 9A Charles A. Wright & Arthur R. Miller, *Federal Practice and Procedure* §2552 at 395-97 (1995)); *Bueno v. City of Donna*, 714 F.2d 484, 490 (5th Cir.1983) ("So long as an inadequate or improper request is sufficient to direct the court's attention to a legal defense, the court is thereby alerted that a proper instruction is required."); *Brandes v. Burbank*, 613 F.2d 658, 668 (7th Cir.1980) ("Even though the tendered instruction is not entirely perfect, there are situations where the court is not relieved of its duty to give the substance of the requested instruction where it appears that an instruction on the issue is needful to enable the jury to determine intelligently the question"); *Posttape Assocs. v. Eastman Kodak Co.*, 537 F.2d 751, 757 (3d Cir.1976) ("[I]f an important issue is timely called to [a trial judge's] attention, he should instruct the jury on that matter."); *Chavez v. Sears, Roebuck & Co.*, 525 F.2d 827, 830 (10th Cir.1975) ("Since the trial court bears the ultimate responsibility for properly instructing the jury, we agree with those courts that have ruled that where an instruction would be beneficial to the jury's proper determination of the case, the court may not merely refuse a requested instruction, but instead has a duty to frame the instruction properly and give it to the jury.");*Emery v. Northern Pac. R.R. Co.*, 407 F.2d 109, 113 n. 3 (8th Cir.1969) ("If the request directs the court's attention to a point upon which the jury has not been charged but upon which an instruction would be helpful, the court's error in failing to charge may not be excused by technical defects in a request to charge.") (internal quotation omitted).

In *Ursich v. da Rosa*, 328 F.2d 794, 797 (9th Cir.1964), we held that a district court "was under no obligation to redraw" an incorrect, yet otherwise applicable jury instruction for the requesting party. The holding of *Ursich* was limited by its circumstances. We specifically noted that the requested instruction concerned an "old rule," the doctrine of res ipsa loquitor, and that we "expect[ed] counsel to be aware of it and to frame proper instructions...." *Id.* n. 1. The instant case, however, presents a much different scenario. Kennedy requested an instruction based on a "new rule" of state law, one that was only a few months old and had yet to be interpreted or applied by any other court.

Moreover, in a case subsequent to *Ursich*, we implicitly recognized that a trial court may have the obligation to correct improperly requested jury instructions. In *Washington State Bowling Proprietors Ass'n v. Pacific Lanes, Inc.*, 356 F.2d 371, 376-77 (9th Cir.1966), we stated that "we do not suggest a trial court is under no obligation to charge on a material issue after requested to do so, even if the instructions as proposed are faulty...."[6]

Today we make explicit what *Pacific Lanes* suggested, and align this circuit with the majority of our sister circuits. We hold that when the district court is presented with an applicable instruction that raises an important issue of law or directs the court's attention to a point upon which an

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[6] Our decision to uphold the district court's refusal to give the proffered instructions was based on the fact that the appellants had failed to resubmit the instructions after the trial judge pointed out the errors, and that the evidence did not support the contention that the requested instruction was on a material issue. *See Pacific Lanes*, 356 F.2d at 377.

instruction to the jury would be important, it is not relieved from the responsibility of giving a proper instruction simply because the party making the request has proposed an instruction that does not completely comply with the relevant law.[7]

C. Harmless Error Analysis

Harmless-error review applies to jury instructions in a civil case. *See, e.g., Caballero v. City of Concord*, 956 F.2d 204, 206 (9th Cir.1992) ("An error in instructing the jury in a civil case requires reversal unless the error is more probably than not harmless."). This review is "less stringent" than review for harmless error in a criminal case, but "more stringent" than review for sufficiency of the evidence. *See id.* at 207; *City of Long Beach*, 46 F.3d at 933 (citing *Caballero*). In review of civil jury instructions for harmless error, unlike review under sufficiency of the evidence, the "prevailing party is not entitled to have disputed factual issues resolved in his favor because the jury's verdict may have resulted from a misapprehension of the law rather than from factual determinations in favor of the prevailing party." *Caballero*, 956 F.2d at 207 (emphasis added).

We hold the district court's failure to give a proper *Rutherford* instruction was not harmless error. "An error in a trial court's jury instructions relating to the parties'

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[7] This obligation of the district court in no way relieves the parties of the responsibility to craft a reasonable instruction that is a good-faith attempt to comply with the law. Kennedy made such an attempt, especially considering that Rutherford was such a recent decision.

respective burdens of proof ordinarily [requires] reversal." *Larez v. Holcomb*, 16 F.3d 1513, 1518 (9th Cir.1994). But *see Mockler v. Multnomah County*, 140 F.3d 808, 812-814 (9th Cir.1998) (improper instruction on plaintiff's burden of proof held harmless when evidence would support verdict for plaintiff in any event).

Appellees argue that Kennedy failed to establish that any type of radiation--and not just radiation from SONGS--actually caused Mrs. Kennedy's CML. This argument is based on the contention that the testimony of Kennedy's expert--that more than 90% of CML cases are caused by radiation--was a personal belief that was unsupportable and contrary to the consensus view of the scientific community.

Cal Edison and Combustion Engineering, however, did not contest the admission of this testimony under the Federal Rules of Evidence, nor did they present a challenge to the testimony under *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993). Because the jury was not presented with any special verdicts or interrogatories, there is no way of knowing the grounds upon which it based its decision. The harmless error analysis does not entitle appellees to have disputed factual issues resolved in their favor. The possibility exists, therefore, that the jury could have found the expert testimony credible, yet still found for the appellees on the basis of the erroneous causation instructions. Accordingly, the failure to give a *Rutherford* instruction cannot be harmless error.

Alternatively, Cal Edison and Combustion Engineering argue that even if a *Rutherford* instruction were given, Kennedy failed to produce enough evidence proving that radiation from SONGS was a substantial factor in contributing to Mrs. Kennedy's risk of CML. In particular, Cal Edison and Combustion Engineering correctly note that their experts provided uncontradicted testimony that, even if Mrs. Kennedy was exposed to radiation from SONGS, there was only a one in one hundred thousand chance that this radiation caused her CML. The failure to give the *Rutherford* instruction, they argue, was therefore harmless error.

Under the jury instructions as given, in order to sustain their burden of proof Kennedy needed to have proven by a preponderance of the evidence that the radiation from SONGS was a "substantial factor" in causing Mrs. Kennedy's CML. In *Rutherford*, the California Supreme Court cautioned that "[u]ndue emphasis should not be placed on the term 'substantial.'" *Rutherford*, 67 Cal.Rptr.2d 16, 941 P.2d at 1214. As discussed above, this standard only requires that the contribution of the individual cause be more than negligible or theoretical. *See id.* at 1219.

Under a preponderance of the evidence standard, the jury is only required to believe that "the existence of a fact is more probable than its nonexistence." *Concrete Pipe and Prods. of Cal., Inc. v. Construction Laborers Pension Trust for So. Cal.*, 508 U.S. 602, 622, 113 S.Ct. 2264, 124 L.Ed.2d 539 (1993). Therefore, all the jury need have concluded, if given a *Rutherford* instruction, was that it was more probable than not that there was more than a negligible probability that Mrs. Kennedy's cancer was caused by

radiation from SONGS. We believe the jury could have reasonably so found.

It would not be unreasonable for a juror to conclude that a one in one hundred thousand chance of developing a fatal cancer was more than a mere theoretical possibility. Presented perhaps more concretely, if the entire U.S. population were exposed to the amount of radiation in appellee's hypothetical upon which its expert based his statistical opinion, then approximately 2,500 people would contract CML.[8]

II. Products Liability Claims

Under California products liability law, "a manufacturer may be held strictly liable in tort for placing a

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[8] While this number is relatively small, it is more than "negligible."While our decision does not rely on such factors, we note that studies have shown that the public maintains a generalized fear of nuclear accidents and that rational individuals may be more likely to overestimate, even in the face of concrete statistics, the likelihood of harm from a nuclear facility. *See* Cass Sunstein, *Social Norms, Social Meaning, and the Economic Analysis of Law*, 27 J. Legal Stud. 799, 803 (1998) (citing studies (1) showing that the public ranks radiation from a nuclear accident as the fourth most serious risk it faces, while experts do not consider such an event likely enough to rank it; and (2) suggesting that low- probability, high-danger risks, such as those from nuclear power plants, might be treated as worse than their "actuarial value"). Because such over-estimation, as the literature suggests, is not necessarily irrational (even though it may be mathematically incorrect), rational jurors could have reasonably concluded that the seemingly low probability of Mrs. Kennedy contracting CML was still "substantial" under California law.

defective product on the market if that product causes personal injury, provided that the injury resulted from a use of the product that was reasonably foreseeable by the defendants. This doctrine of strict liability extends to products which have design defects, manufacturing defects, or warning defects." *Sparks v. Owens-Illinois, Inc.*, 32 Cal.App.4th 461, 38 Cal.Rptr.2d 739, 745 (1995) (internal quotation and citation omitted). "Manufacturers of defective products are liable for injuries not only to the purchaser or user of such products, but to injured bystanders as well...." *Barrett v. Superior Court*, 222 Cal.App.3d 1176, 272 Cal.Rptr. 304, 309 (1990).

We first note that strict liability can be consistent with Price-Anderson. It is relatively well-settled that federal regulations provide the sole measure of a defendant's duty under Price-Anderson. *See*, e.g., *Roberts v. Florida Power & Light Co.*, 146 F.3d 1305, 1308 (11th Cir.1998) (citing cases from the Seventh, Sixth, and Third Circuits). This is because the "states are precluded from regulating the safety aspects of nuclear power," *Silkwood v. Kerr-McGee, Inc.*, 464 U.S. 238, 240-241, 104 S.Ct. 615, 78 L.Ed.2d 443 (1984), as such safety is "the exclusive business of the federal government." *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 461 U.S. 190, 208, 103 S.Ct. 1713, 75 L.Ed.2d 752 (1983).

Strict liability would only be inconsistent with Price-Anderson, then, if a specific claim would enable a plaintiff to recover from a defendant in a public liability action under the Act without first establishing that the defendant breached a federally imposed duty of care. *See Roberts*, 146 F.3d at 1308 (affirming district court dismissal

of strict liability and negligence claims on grounds that plaintiffs did not allege that defendant exposed them to radiation in excess of the maximum allowable by federal regulations).

More importantly, the Supreme Court itself has contemplated strict liability actions under Price-Anderson. In *Silkwood*, 464 U.S. at 256, 104 S.Ct. 615, the Court noted the tension between "the conclusion that safety regulation is the exclusive concern of the federal law and the conclusion that a state may nevertheless award damages based on its own law of liability." The Court found, however, that "Congress intended to stand by both concepts and to tolerate whatever tension there was between them." *Id.* The Court concluded that "[i]t may be that the award of damages based on the state law of negligence or *strict liability* is regulatory in the sense that a nuclear plant will be threatened with damages standards, but that regulatory consequence was something that Congress was quite willing to accept." *Id.* (emphasis added).

Finding the application of strict products liability consistent with Price-Anderson, we consider the merits of the plaintiffs' claims. As we noted in our discussion of their claims against SONGS, the plaintiffs have presented evidence that Mrs. Kennedy's cancer was caused by exposure to radioactive "fuel fleas" released from Combustion Engineering's apparently defective fuel rods and carried home on her husband's clothing. Despite this showing, Combustion Engineering argues that it was entitled to summary judgment on strict liability because it never marketed the fuel rods to the public, and because it could not have foreseen that the rods would injure a nonemployee of SONGS like Mrs. Kennedy.

California imposes strict products liability only for injuries caused by defective products that a manufacturer or distributor "places on the market." *Greenman v. Yuba Power Prods., Inc.*, 59 Cal.2d 57, 27 Cal.Rptr. 697, 377 P.2d 897, 900 (1963) (en banc) (Traynor, J.). To place a product on the market is to "play an integral role in the 'producing and marketing enterprise' of a defective product and [to] profit from placing the product into the stream of commerce." *Bay Summit Community Ass'n v. Shell Oil Co.*, 51 Cal.App.4th 762, 59 Cal.Rptr.2d 322, 328 (1996); *see Price v. Shell Oil Co.*, 2 Cal.3d 245, 85 Cal.Rptr. 178, 466 P.2d 722, 727-28 (1970); *Mancuso v. Southern Cal. Edison Co.*, 232 Cal.App.3d 88, 283 Cal.Rptr. 300, 305 (1991) ("Placing an article on the market under the Greenman test is the functional equivalent of putting a product in the stream of commerce ...." (quotations omitted)).

California has recognized three exceptions to this broad rule. First, a party that plays only a minimal role in the manufacture or distribution of defective product is not deemed to have placed the product on the market. *See Bay Summit*, 59 Cal.Rptr.2d at 330. Second, a product is not placed on the market when it does not enter the stream of commerce by means of a commercially significant market transaction. *See Mancuso*, 283 Cal.Rptr. at 308. And third, a party does not place a product on the market by disposing of it in a unique or isolated transaction. *See Price*, 85 Cal.Rptr. 178, 466 P.2d at 728.

Though only the last exception arguably applies here, the thread that binds all three together is the "paramount policy" of strict products liability: "the protection of otherwise defenseless victims of manufacturing defects and

the spreading throughout society of the cost of compensating them." *Price*, 85 Cal.Rptr. 178, 466 P.2d at 725-26; *see Carlin v. Superior Court*, 13 Cal.4th 1104, 56 Cal.Rptr.2d 162, 920 P.2d 1347 (1996); *Greenman*, 27 Cal.Rptr. 697, 377 P.2d at 901. In the case of isolated trafficking in defective goods, the loss-spreading rationale that underlies strict products liability simply does not apply. *See Vaerst v. Tanzman*, 222 Cal.App.3d 1535, 272 Cal.Rptr. 503, 505-06 (1990); *see also Galindo v. Precision American Corp.*, 754 F.2d 1212, 1218-19 (5th Cir.1985) ("It is clear that the rationale for imposition of strict liability is served only if the defendant is in the business of releasing products into the stream of commerce."); *Restatement (Second) of Torts* §402A, cmt. f (1965) ("The basis [of strict liability] is lacking in the case of the ordinary individual who makes the isolated sale.").

The market for Combustion Engineering's products does appear to be narrow, and the consumers of its products few and sophisticated. But no California court has found the loss-spreading rationale of strict products liability inapplicable to the sale of products into a limited market by a firm that is in the business of doing so. California has imposed strict liability on defendants that dealt in defective goods on only a few occasions, *see Fakhoury v. Magner*, 25 Cal.App.3d 58, 101 Cal.Rptr.473, 476 (1972) (landlord who leased five furnished apartments strictly liable for defective furniture); *Rawlings v. D.M. Oliver, Inc.*, 97 Cal.App.3d 890, 159 Cal.Rptr. 119, 122 (1979) (manufacturer that produced nine specially-ordered kelp-drying machines strictly liable for defects).

The Restatement gives as examples of isolated transactions exempted from strict liability "the housewife who, on one occasion, sells to her neighbor a jar of jam," or "the owner of an automobile who, on one occasion, sells it to his neighbor, or even sells it to a dealer in used cars...." *Restatement* §402A, cmt. f. California has applied the exception in the case of a landlord who leased his own residence on a single occasion, *see Vaerst*, 272 Cal.Rptr. at 505-06; a one time seller of used manufacturing equipment, *see Ortiz v. HPM Corp.*, 234 Cal.App.3d 178, 285 Cal.Rptr. 728, 733 (1991); and a builder that constructed only two residential homes. *See Oliver v. Superior Court*, 211 Cal.App.3d 86, 259 Cal.Rptr. 160, 161-62 (1989).

The record suggests that Combustion Engineering has supplied thousands of fuel rods on a continuing basis to SONGS and several other nuclear plants. Combustion Engineering's enterprise differs entirely in both quality and degree from the ad hoc and infrequent activities to which the isolated transaction exception has been previously deemed applicable. The loss spreading rationale of strict products liability applies to this enterprise with full force. For purposes of strict liability, we conclude that Combustion Engineering has placed its fuel rods on the market.

The "market for which [a product] is produced" also "bears directly upon the issue of foreseeability" of the plaintiff's injury. *Dosier v. Wilcox & Crittendon Co.*, 45 Cal.App.3d 74, 119 Cal.Rptr. 135, 137 (1975) ("'The intended marketing scheme is one basis for deciding which users can be foreseen.'") (quoting *Helene Curtis Indus. v. Pruitt*, 385 F.2d 841, 860 (5th Cir.1967)). Yet California has not restricted the class of foreseeable plaintiffs to immediate

consumers to whom defective products are directly marketed. Rather, California holds "[m]anufacturers of defective products ... liable for injuries not only to the purchaser or user of such products, but to injured bystanders as well." *Barrett v. Superior Ct.*, 222 Cal.App.3d 1176, 272 Cal.Rptr. 304, 309 (1990). "[A]n injury to a bystander is often a perfectly foreseeable risk of the maker's enterprise, and the considerations for imposing such risks on the maker without regard to his fault do not stop with those who undertake to use the chattel." *Elmore v. American Motors Corp.*, 70 Cal.2d 578, 75 Cal.Rptr. 652, 451 P.2d 84, 89 (1969) (quotations omitted).

In *Elmore*, the California Supreme Court found that a defective automobile "constitutes a substantial hazard on the highway not only to the driver and passenger of the car but also to pedestrians and other drivers." *Id.*

> The public policy which protects the driver and passenger of the car should also protect the bystander, and where a driver or passenger of another car is injured due to defects in the manufacture of an automobile and without any fault of their own, they may recover from the manufacturer of the defective automobile.

Id. Since *Elmore*, California courts have recognized as foreseeable bystanders, employees injured by defective equipment owned or leased by their employers, *see Barker v. Lull Eng'g Co.*, 20 Cal.3d 413, 143 Cal.Rptr. 225, 573 P.2d 443, 457 (1978); *Pike v. Frank G. Hough Co.*, 2 Cal.3d 465, 85 Cal.Rptr. 629, 467 P.2d 229, 235 (1970); *Barrett*, 272 Cal.Rptr. at 309-10; independent contractors working

alongside such employees, *see Johnson v. Standard Brands Paint Co.*, 274 Cal.App.2d 331, 79 Cal.Rptr. 194, 197-98 (1969); a neighbor of a homeowner in whose garage a water heater had been defectively installed, *see Hyman v. Gordon*, 35 Cal.App.3d 769, 111 Cal.Rptr. 262, 264-65 (1973); an onlooker blinded by debris kicked up by a lawnmower, *see Foglio v. Western Auto Supply*, 56 Cal.App.3d 470, 128 Cal.Rptr. 545 (1976); and a parking lot attendant struck by a customer's rolling car. *See Preissman v. Ford Motor Co.*, 1 Cal.App.3d 841, 82 Cal.Rptr. 108, 113 (1969).

These examples are not exhaustive of the circumstances in which injury to a bystander by a defective product may be foreseeable. "[T]he question of foreseeability of injury is an issue for the trier of fact" to be considered on the particular facts of each case. *Johnson*, 79 Cal.Rptr. at 198; *see also Dosier*, 119 Cal.Rptr. at 137. It is therefore unavailing to distinguish cases imposing strict liability for defective products sold to employers as having involved injuries to employees, and not employees' family members. California strict liability turns on actual foreseeability of injury to the plaintiff in the circumstances of a particular case, and not on categorical distinctions among bystanders based on their relationship to the immediate consumer of the defective product. *See Johnson*, 79 Cal.Rptr. at 198 ("Under the strict liability tort theory, where notions of privity have no part, the bystander could probably recover if injury to him was foreseeable under generally applicable tests." (quotations omitted)); *see also Elmore*, 75 Cal.Rptr. 652, 451 P.2d at 88-89 (foreseeability of bystanders is not restricted by privity of contract with seller of defective goods); *Greenman*, 27 Cal.Rptr. 697, 377 P.2d at 900 (same).

On the facts of this case, it is perfectly reasonable to conclude that the spouse of a nuclear-plant worker might fall within the foreseeable zone of danger posed by Combustion Engineering's products. There was evidence that due to defects in manufacture, over one hundred Combustion Engineering fuel rods used in the SONGS 3 reactor tended to rupture and disintegrate when brought up to power, releasing microscopic bits of radioactive matter. A SONGS site management memorandum suggests that particular features of these "fuel fleas" made them especially prone to being transported off-site on skin and clothing:

> Since they are tiny (normally invisible to the naked eye) dry particles, they do not cling to most surfaces as tenaciously as normal contamination and can be carried short distances on surfaces and then dropped. This intensifies contamination spread problems.

Whether a defect that releases such particles poses a foreseeable risk to family members of workers who are exposed to them is at least a question of fact on which reasonable people may differ, and thus should have been presented to the jury. It was error for the district court to decide the question as a matter of law.

III. Suggestions on Remand

As we noted, the jury was not presented with special verdicts or interrogatories, creating difficulties on appellate review. Had we known the basis upon which the jury made its determination--either that Kennedy had not proven exposure to radiation from SONGS, or that such exposure, though

proven, was not the legal cause of Mrs. Kennedy's death--our disposition of the case would have been greatly facilitated.

While we are not prescribing a set of jury instructions, we highlight that proof of exposure is a predicate requirement of *Rutherford*. Proof of exposure was not at issue in *Rutherford*, as the case was conducted in a bifurcated trial. Nonetheless, the California Supreme Court made clear that exposure to the allegedly harmful substance must be proven. First, the court noted that in only one instance--where hundreds of manufacturers had made the same drug using an identical formula--have toxic tort plaintiffs been relieved of the burden of proving exposure. *See* 941 P.2d at 976.

More importantly, the court explicitly indicated that proof of exposure was still a part of a plaintiff's burden under the newly-established rule. At the end of its discussion on the causation issue, the court reiterated the requirements of a *Rutherford* instruction:

> In conclusion, our general holding is as follows. In the context of a cause of action for asbestos-related injuries, the plaintiff must *first establish some threshold exposure to the defendant's asbestos-containing products* ....

Id. at 982 (emphasis added). Given the language of *Rutherford* and the inherent difficulties in a general verdict for situations like the instant case, the district court, on remand, may want to consider presenting the jury with a form of verdict that will allow a reviewing court, as well as the parties, to be assured that the requirements of *Rutherford* have been met.

The decision of the district court is REVERSED, and the case is REMANDED for a new trial consistent with this opinion.

APPENDIX F

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, April 10, 2001]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy, *Plaintiffs-Appellants*,	)
v.	)
Southern California Edison Company; Combustion Engineering, Inc., *Defendants-Appellees*.	)

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

ORDER

The "Consent Motion for Leave for Amicus to Present Oral Argument" is GRANTED. The United States' ten minutes of oral argument shall be deducted from the time allotted to Appellees.

APPENDIX G

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, February 20, 2001]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy,
Plaintiffs-Appellants,

v.

Southern California Edison Company; Combustion Engineering, Inc.,
Defendants-Appellees.

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

ORDER

Rehearing as to the issues identified in this court's order of January 2, 2001 shall be held on April 26, 2001, at 1:30 pm, in San Francisco, California.

APPENDIX H

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, January 2, 2001]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy,
Plaintiffs-Appellants,

v.

Southern California Edison Company; Combustion Engineering, Inc.,
Defendants-Appellees.

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

ORDER

The Motions by Amici Curiae Lockheed Martin Corporation, et al., American Public Power Association, et al., and Robert K. Adair, et al., for leave to file briefs in support of the Petition for Rehearing and Suggestion for Rehearing En Banc, are granted. The Clerk shall file the briefs that have been received.

Defendants-appellees' petition for rehearing is granted as to the issues identified below. Within thirty (30) days of the filed date of this Order, the parties, and amicus the United States, shall file supplemental briefs not to exceed twenty-five (25) pages addressed to the following issues:

1. Whether California tort law on causation has been preempted by 42 U.S.C. §2014(q) (The Price-Anderson Act).

2. Did defendants-appellees raise this issue below? If not, was the preemption argument waived through default?

Judge Boochever concurs and would further grant rehearing as to all issues of causation.

SO ORDERED.

APPENDIX I

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, October 13, 2000]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy, *Plaintiffs-Appellants*,	)
v.	)
Southern California Edison Company; Combustion Engineering, Inc., *Defendants-Appellees*.	)

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

ORDER

The parties shall file supplemental briefs in response to the brief in support of the Petition for Rehearing and Rehearing En Banc filed by amicus United States. The supplemental briefs shall not exceed 20 pages in length and fifty (50) copies shall be filed within 30 days of the filed date of this Order. The following issues shall be addressed in the supplemental briefs:

1. Does *Bockrath v. Aldrich Chem. Co., Inc.*, 86 Cal.Rptr. 846, 980 P.2d 398 (1999), stand for the proposition that the *Rutherford v. Owens-Illinois, Inc.*, 67 Cal.Rptr.2d 16, 941 P.2d 1203 (1997), risk instruction applies outside the asbestos context? If not, what support exists in California tort law for the contention that the California Supreme Court would apply the *Ruthoford* risk instruction to the facts of this case?

2. What is the role of the "substantial factor" causation test in California tort law? In responding, please consider *Mitchell v. Gonzales,* 1 Cal.Rptr.2d 913, 819 P.2d 872 (1991), as well as *Rutherford,* and *Bockrath.* Limit your response to California law.

3. Does a supplemental *Rutherford* risk instruction impermissibly alter the "substantial factor" causation test (embodied in BAJI 3.76) under California law? If so, how? If not, how is it consistent with California law?

4. Should issues 1 through 4, or some variant of any or all of them, be certified to the California Supreme Court before this court renders any decision on rehearing?

SO ORDERED.

APPENDIX J

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, September 15, 2000]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy, *Plaintiffs-Appellants*,	)
v.	)
Southern California Edison Company; Combustion Engineering, Inc., *Defendants-Appellees*.	)

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

ORDER

The Federal Government's Motion for Extension of Time to File Amicus Brief is GRANTED.

APPENDIX K

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, August 28, 2000]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy, *Plaintiffs-Appellants*,	)
v.	)
Southern California Edison Company; Combustion Engineering, Inc., *Defendants-Appellees*.	)

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

ORDER

Defendants-Appellees' request to file a reply to Plaintiffs-Appellants' response to the Petition for Rehearing and Rehearing En Banc is GRANTED. The reply shall not exceed ten (10) pages in length. Fifty (50) copies shall be filed within fifteen (15) days of the filed date of Plaintiffs-Appellants' response.

APPENDIX L

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, August 25, 2000]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy, *Plaintiffs-Appellants*,	)
v.	)
Southern California Edison Company; Combustion Engineering, Inc., *Defendants-Appellees*.	)

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

ORDER

Defendants-Appellees' request to file a reply to Plaintiffs-Appellants' response to the Petition for Rehearing and Rehearing En Banc is GRANTED. The reply shall not exceed ten (10) pages in length. Fifty (50) copies shall be filed within fifteen (15) days of the filed date of Plaintiffs-Appellants' response.

APPENDIX M

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, August 18, 2000]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy,
Plaintiffs-Appellants,

v.

Southern California Edison Company; Combustion Engineering, Inc.,
Defendants-Appellees.

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

ORDER

Plaintiffs-Appellants shall file a response, not to exceed twenty-five (25) pages in length, to the Petition for Rehearing and Rehearing En Banc filed on August 10, 2000. Fifty (50) copies of the response shall be filed within twenty-one (21) days of the filed date of this Order. The following issues shall be addressed in the response: (1) whether the Opinion's application of *Rutherford v. Owens-Illinois, Inc.*, 941 P.2d 1203 (Cal. 1997), is inconsistent with the principles of the Price-Anderson Act, 42 U.S.C. §2011 *et seq.*, and California tort law, with special emphasis on this court's Opinion in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311 (9th Cir. 1995); and (2) the criticisms of the Opinion's language stating that "[i]t would not be unreasonable for a juror to conclude that a one in one hundred thousand chance of developing a fatal cancer was more than a theoretic possibility" and that such a chance is more than "negligible" under California law. *See Kennedy v. S. Cal. Edison Co.*, 2000 WL 1099784, at *11 (9th Cir. July 20, 2000).

The panel's decision on the motions by amici for leave to file their briefs in support of the Petition for Rehearing and Rehearing En Banc is withheld pending consideration of the response.

APPENDIX N

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

No. 98-56157
D.C. No. CV-95-03769-NAJ/RBB
(Southern California)

[Filed, August 11, 2000]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; Shawn Kennedy; Eric Kennedy; Shannon Kennedy, by and through her parent and guardian Joe Kennedy; and Chad Kennedy, by and through his parent and guardian Joe Kennedy,
Plaintiffs-Appellants,

v.

Southern California Edison Company; Combustion Engineering, Inc.,
Defendants-Appellees.

Before:
BOOCHEVER, HAWKINS,
and THOMAS, Circuit Judges.

ORDER

The Motion for Thirty-Day Extension of Time for Filing Petition for Rehearing and Rehearing En Banc and Related Briefing by Governmental or Third-Party Entities is GRANTED.

APPENDIX O

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA

No. CV-95-03769(RBB)

[Filed, March 6, 1998]

Joe Kennedy, as successor in interest and a personal representative of the Estate of Ellen Marie Kennedy; et al., Plaintiffs,	)
v.	)
Southern California Edison Company, Combustion Engineering, Inc., and Does 1 through 100, inclusive *Defendants*.	)

JUDGMENT

The trial of this action commenced before a jury on January 27, 1998 before the Honorable Napoleon A. Jones, Jr. Don Howarth, Suzelle M. Smith and Katy Jacobs of the firm Howarth & Smith appeared on behalf of Plaintiffs, and Defendants were represented by Ned N. Isokawa, John A. Reding, and John P, Phillips of the firm PAUL, HASTINGS, JANOFSKY & WALKER LLP.

Witnesses on the part of Plaintiffs and Defendants were sworn and examined. After hearing all the evidence, arguments of counsel and instructions of the Court, the jury on March 6, 1998, returned its unanimous general verdict against Plaintiffs and for Defendants Southern California Edison Company and Combustion Engineering, Inc.

It is therefore ordered, adjudged and decreed that Plaintiffs take nothing from Defendants, and that all Defendants recover their costs according to law.

DATED: March 6, 1998

/s/ _____
Napoleon A. Jones, Jr.
United States District Judge